DOCUMENT RESUME

ED 441 167 CE 080 203

AUTHOR	Straka, Gerald A., Ed.
TITLE	European Views of Self-Directed Learning: Historical, Conceptual, Empirical, Practical, Vocational. LOS, Learning Organized Self-Directed Researchgroup.
ISBN	ISBN-3-89325-552-4
PUB DATE	1997-00-00
NOTE	163p.; For another LOS volume, see CE 080 202.
AVAILABLE FROM	Waxmann, Verlag GmbH, Postfach 8603, D-48046 Munster, Germany. e-mail: info@waxmann.com; Web site: http://www.waxmann.com.
PUB TYPE	Books (010) -- Collected Works - General (020)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	Adult Learning; Adult Students; Adults; *Developed Nations; *Educational Needs; Foreign Countries; *Independent Study; *Lifelong Learning; Postsecondary Education; Self Actualization; *Student Motivation
IDENTIFIERS	*Europe

ABSTRACT

Following an Introduction by editor Gerald A. Straka that posits various definitions of self-directed learning and discusses the views of the various authors in the text, this book consists of nine papers addressing issues and conceptions of self-directed learning in Europe. The following are included: "Self-Directed Learning in Continuing Education--A Report from Switzerland" (Christoph Metzger); "Self (-Directed) Learning in France" (Philippe Carre); "Self-Learning Activities in the French Community of Belgium" (Brigitte Denis); "Self-Directed Learning in the Netherlands" (Marcel R. van der Klink, Wim J. Nijhof); "Self-Directed Learning among Adults in the United Kingdom" (Keith Percy); "Self-Directed Learning in Portugal" (Maria Joao Malheiro Filgueiras); "Learning, Working and Social Practices: History and Future Trends in Italy" (Cristina Zucchermaglio); "Self-Directed Learning in Greece" (Nicholas Iliadis); and "Self-Directed Learning in Germany: From Instruction to Learning in the Process of Work" (Gerald A. Straka). (Each paper contains references.) (KC)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 441 167

Gerald A. Straka (Ed.)

EUROPEAN VIEWS OF SELF-DIRECTED LEARNING

Historical, Conceptional, Empirical, Practical, Vocational

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL HAS
BEEN GRANTED BY

G. Straka

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

LOS
LEARNING
ORGANIZED
SELF-DIRECTED
RESEARCHGROUP

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

WAXMANN

EUROPEAN VIEWS OF SELF-DIRECTED LEARNING

Gerald A. Straka (Ed.)

EUROPEAN VIEWS OF SELF-DIRECTED LEARNING

Historical, Conceptional, Empirical, Practical, Vocational

LOS
LEARNING
ORGANIZED
SELF-DIRECTED
RESEARCHGROUP

WAXMANN
Munster · New York · Munchen · Berlin

Die Deutsche Bibliothek – CIP-Einheitsaufnahme

European views of self-directed learning : historical, conceptional, empirical, practical, vocational / LOS, Learning Organized Self-Directed Researchgroup. Gerald A. Straka (Ed.). – Münster ; New York ; München ; Berlin: Waxmann, 1997
(Lernen, organisiert und selbstgesteuert – Forschung – Lehre – Praxis ; Bd. 1)
ISBN 3-89325-552-4

Lernen, organisiert und selbstgesteuert
Forschung – Lehre – Praxis
hrsg. von Gerald A. Straka

ISBN 3-89325-552-4

© Waxmann Verlag GmbH, 1997
Postfach 8603, D-48046 Münster, F. R. G.

http://www.waxmann.com
E-mail: info@waxmann.com

Umschlaggestaltung: Pleßmann Kommunikationsdesign, Ascheberg
Druck: Zeitdruck GmbH, Münster
Gedruckt auf alterungsbeständigem Papier, DIN 6738

Alle Rechte vorbehalten
Printed in Germany

Foreword

With the 10th International Self-Directed Learning Symposium in West Palm, Florida, the Deuxième Colloque sur l'Autoformation, Lille as well as the European Year of Lifelong Learning in 1996 in mind, Philippe Carré and myself began to think about working out a European View on self-directed learning. It was Philippe, embodying both the theoretical and the practical by being a faculty member of the University of Lille and a consultant at Interface, Etudes et Formation, who forced me to carry out this plan. After reviewing the manuscripts, I realized that research on and the practice of self-direction in learning varied from country to country. There are different roots and cultures within Europe as well as perspectives on this phenomenon which is indicated by the title of this publication, European Views on Self-Directed Learning, a work which focuses on historical, conceptional, empirical, practical and vocational aspects.

The reader is invited to start the journey in Switzerland and to continue via France, Belgium and the Netherlands to the United Kingdom. The reader will cross the sea once again, this time to Portugal, Italy and Greece and will return to central Europe where Germany is situated. The aim of this round trip is to inititate a discussion about this type of learning at a European level and to invite others to contribute any results or information concerning research and development in those countries not yet in the group. It is our conviction and assumption that being interested and able to partake in self-directed learning will become the key qualification in order to survive global competition and to develop a humane information society.

This work would not have been possible had not the contributions been completed on time. I wish to thank Kathryn Kieschnick and Gordon Crawford who, as native speakers of English, 'polished off' the manuscripts. Thanks are also due to Dipl. Oec. Markus Stöckl, Nicole Zellmer as well as to my family who helped me complete this work.

Bremen, April 1997 Gerald A. Straka

Table of Contents

Gerald A. Straka
Introduction.....1

Christoph Metzger
Self-Directed Learning in Continuing Education - a Report from Switzerland...6

Philippe Carré
Self (-Directed) Learning in France.....26

Brigitte Denis
Self-Learning Activities in the French Community of Belgium.....39

Marcel R. van der Klink & Wim J. Nijhof
Self-Directed Learning in the Netherlands.....59

Keith Percy
Self-Directed Learning among Adults in the United Kingdom.....75

Maria Joao Malheiro Filgueiras
Self-Directed Learning in Portugal.....87

Cristina Zucchermaglio
Learning, Working and Social Practices:
History and Future Trends in Italy.....100

Nicholas Iliadis
Self-Directed Learning in Greece.....113

Gerald A. Straka
Self-Directed Learning in Germany:
From Instruction to Learning in the Process of Work 129

About the Authors 153

Gerald A. Straka

Introduction

Learning is indeed en vogue. In the theory and practice of human resource development, the subject 'learning organization' is drawing a large amount of attention. The European Union declared 1996 the 'Year of Lifelong Learning', a year which also saw the United Kingdom start the great research programme 'Learning Society'.

In this context, self-directed learning forms a central - if not the central - subject. This form of learning appears to have set off on a jouney around the world as the following list of conferences indicates:

- 'The First Asia-Pacific Seminar on Self-Directed Learning' in July 1995 in Seoul,
- 'The Third European Colloque on Autoformation', November 1996 in Bordeaux,
- 'The 11th International Self-Directed Learning Symposuium', March 1997 in the USA,
- 'The First World Conference on Self-Directed Learning', September 1997 in Montreal.

Even though self-directed learning is apparently under discussion world-wide, this does not in any way mean that a unanimous understanding of self-directed learning underlies this discussion, one indicator being the large number of terms for this phenomenon. Philippe Carré (1994), for example, discovered well over twenty different terms for self-directed learning. And for the 10th International Self-Directed Learning Symposium, Roger Hiemstra analysed the previous conference proceedings. He established over 200 terms (Hiemstra, 1996).

What is, therefore, self-directed learning? How is it to be described? Knowles, who together with Tough made important contributions to this form of self-education gaining the attention it deserved in the theory and practice of adult education in the USA, defines self-directed learning as follows: „In its broadest meaning, 'self-directed learning' describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, indentifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (Knowles, 1975, 18). However, this is not followed up by more extensive theoretical derivation or systematic description of what 'initiative' means and which activities from establishing the need to learn up to evaluating the learning outcomes may take place (Straka & Nenniger, 1995). Methodological evaluations of the Self-Directed Readiness Scale (Guglielmino, 1977) as well as the Oddi Continuing Learning Inventory (Oddi, 1984) - both are instruments which are very widely used in the Anglo-American world - contributed only to a certain degree to the clarification of the term 'self-directed learning' (Straka, 1996a, 1996b, 1996c; Straka & Hinz, 1996).

Self-directed learning seems to be a complex phenomenon which may be approached from a number of different perspectives. The contributions that follow this introduction will verify this view. However, in order to give the reader a framework by which to structure these reports from the different regions of Europe, three general and broad contextual perspectives will be introduced here. The first are the individual's dispositions and activities characterizing self-directed learning. The second is the goal as part of the culture or the educational philosophy of a country, company or of an educational institution. The third covers the social, historical, educational and educative environmental conditions which might influence self-directed learning. These perspectives will be supplemented with methodological ones, as for example, historical, hermeneutical, interpretative, empirical as well as normative.

Metzger differentiates two meanings of self-directed learning: the learners' ability to make autonomous decisions about goals and processes of learning and the ability to adapt to given teaching-learning environments and to find ways of learning which best suit them. Creating a variety of teaching-learning arrangments and making learning strategies a main part of the teaching-learning process are the two approaches for further development of self-directed learning in Switzerland. A model for learning strategies and an instrument with which to diagnose them is also introduced.

Carré works out the differences and comon features between self-directed learning and 'autoformation' and demonstrates that concepts of 'autoformation' are found way back in the history of French educational thought. Indicating a way to boost the productivity of training, bringing education in line with technological development, being a focal point for innovation and training as well as autonomy as a value are reasons why self-learning became popular in France. Autodiaxy, learning to be, facilitating autonomous learning, learning through social groups and learning to learn all represent different approaches (radical, existential, educational, social, cognitive) to self-directed learning.

Self learning is not a new phenomenon in the Belgian French Community. In 1959, a special department of the Ministry of Education, 'Le Service de l'Enseigement à Distance', was created and other institutions, especially small/medium-sized enterprises, are now initiating and supporting self-learning activities. To describe the diverse implementation of self-learning activities, Denis records the results of a recent questionnaire survey. Up to 49 companies and institutions gave answers to aspects ranging from the definition of self-learning activities, target groups, fields covered, structures and the didactic resources available through to procedures of evaluation which are implemented.

For the Netherlands, van der Klink and Nijhof point out that characteristics of individuals, of curricula or training as well as of organizations are the three meanings of self-directed learning. These by no means mutually exclusive aspects are described with examples from theory and practice. The multidimensionality in combination with the numerous theoretical approaches of studying the phenomenon of self-direced learning, leave as a preliminary result a fragmented picture.

For the past fifteen years in the United Kingdom, theoretical discussions at the post-compulsory educational level have been hegemonised by the twin 'umbrella' concepts of 'experiential' and 'open' learning. Percy reviews trends in the broad fields of open, distance, flexible and experiental learning focusing on the adult learner's choice of content, order, timing, pace, location, purpose and goal. Results of empirical investigations into self-directed learning in work and community are recorded and evaluated.

The history of self-directed learning in Portugal began with the 'old apprenticeship system'. Filgueiras claims, however, that there has not been a broad discussion on this topic at a national level. The meaning of self-directed learning is broad and ranges from informal, distance and programmed to individualized learning. European Union programmes seem to have important impacts on the practice of self-directed learning in Portugal.

Within the topic of organizational learning, Zucchermaglio states that self-directed learning has recently become an object of increasing interest in Italy within the world of work training as well as within organizations themselves. Unfortunately, the use and misuse of this label hide the fact that learning processes in work contexts are still somewhat invisible and are not analysed in their specificity. There is still very little knowledge about the way in which professional competencies are acquired or about the contribution of learning processes to the organizational innovation or flexibility. Some results of ethnographic studies of working-learning practices and discourses verify that working and learning are social and situated practices.

According to Iliadis, the educational system does not have any links with production for the economic structure in Greece. Most young people enter the labour market without any form of professional qualification or training. Self-directed learning is a compulsory practice for many people trying to penetrate and survive the world of work. The supply, opportunities and facilities for self-directed learning can in no case be considered an organised system. Practices of this type are mostly restricted to individual efforts towards facing temporarily short-term needs and are not a well established, continuous cultural process. However, there are some initiatives and practices which could be adopted by other institutions.

Theory and practice of vocational education in Western Germany after 1945 shifted from the 'Four-Steps-Method' to the 'Leittextmethode' (guiding text method) supporting self-direction in learning. The latter is based on the concept of the complete action which is a necessary, but not sufficient, condition for learning, as Straka points out. The academic discussion on self-directed learning reached its first peak around 1980. In the late eighties and early ninetees, a number of studies verified the importance of self-directed learning in the process of work and measures for improving self-direction in learning were undertaken. As part of a national research programme about teaching-learning processes in primary commercial education (1994-1999), several research projects will attempt to conceptualize, validate and investigate different methods of improving self-direction in learning. As an example, the conception of a two shells-model of motivated self-directed learning is presented and environmental conditions which support self-directed learning in the process of work are discussed.

To summarize, different stages and views on self-directed learning characterize theory and practice in Europe. These range from sophisticated models to general advocacies for self-direction in work related learning. However, all the contributors agree about the lack of empirical research concerning readiness and ability for as well as processes of self-directed learning and the identification and the testing of factors which may have an impact on this form of qualification in the workplace. So far, this reader is an invitation to start upon this key qualification for mastering global competition and constructing a humane information society at a European level.

References

Carré, P. (1994): Self-directed learning in french professional education. In H.L. Long. & Associates (eds.), New ideas about self-directed learning. Oklahoma: University Press. 139-148.

Cheong, C.K & Cheong, J.W. (eds.) (1996). Challenges of self-directed learning in Asia and the Pacific. Seoul: Won Mi Sa.

Guglielmino, L. M. (1977). Development of the self-directed learning readiness scale. (Doctoral dissertation. University of Georgia). Dissertation Abstracts International, 38, 6467 A.

Knowles, M. S. (1975). Self-directed learning. Chicago: Follett.

Oddi, L.F. (1984). Development of an instrument to measure self-directed continuing learning. (Doctoral dissertation, Northern Illinois University). Dissertation Abstracts International, 46, 49A.

Senge, P. (1990). The fifth discipline: the art and practice of the learning organization. London [etc.]:Century Business.

Straka, G.A. (1996a). Construct validation of the Oddi Continuing Learning Inventory. In H.B. Long and Associates (eds.), Current developments in self-directed learning. Oklahoma (University of Oklahoma), 65-80.

Straka, G.A. (1996b). Problems in measuring self-directed learning readiness. In C.K.Cheong & J.W. Cheong (eds.), Challenges of self-directed learning in Asia and the Pacific. Seoul: Won Mi Sa 1996, 39-58.

Straka, G.A. (1996c). Cross-Cultural Validity of The Guglielmino 'Self-Directed Readiness-Scale'. In K.-P. Treumann; G. Neubauer; R. Möller.; J. Abel (eds.), Methoden und Anwendungen empirischer pädagogischer Forschung. Münster:Waxmann, 48-59.

Straka, G.A. & Hinz, I. (1996). The original SDLRS (Self-Directed-Readiness-Scale) reconsidered. In: W. Bos & C. Tarnai (eds.), Ergebnisse qualitativer und quantitativer empirischer pädagogischer Forschung. Münster: Waxmann, 185-199.

Straka, G. A. & Nenniger, P. (1995): A conceptual framework for self-directed-learning readiness. In H.L. Long and Associates (eds.), New dimensions in self-directed learning. Oklahoma: University Press. 243-255.

Christoph Metzger

Self-Directed Learning in Continuing Education - a Report from Switzerland

Self-directed learning or self-regulated learning is a current issue in Switzerland at all levels of the educational system, including the continuing adult education in its various forms such as education within business and industry and such offered by public and private schools, associations and other firms. Although nearly no empirical research related to self-directed learning in continuing education can be found in Switzerland, it ought to be possible to identify some main trends because self-directed learning has become one of the most important topics in the educational discussion, not only in primary and secondary education, but also in higher as well as in vocational and general adult education. Nevertheless, some caution is needed, as self-directed learning not only means a real challenge for the didactic and methodology of adult education but is also just a catchword for any kind of actionism in education.

1 Some Reasons for the Current Discussion about Self-Directed Learning

The neo-behavioristic paradigm of learning and instruction had strongly influenced theory and practice of education during the 70s and 80s. Therefore, many curricula were developed in the form of catalogues of very precisely operationalised and product-oriented behavioural objectives. Teaching methods as means to impart knowledge were of more interest than the learners' processes. Finally, as far as the differences between the learners were seen as central for their choice of methods and strategies, the solution was seen in the adaptation of methods and strategies to these differences. In the 80s, and certainly in the 90s, a slow but steady change in focus has taken place and is actually dominating the theoretical debate as well as the practice of education. Along with the increasing cognitivistic and constructivistic view, and in agreement with Shuell (1986), learning is seen much more as an active, constructive and goal-oriented process: (1) knowledge is acquired by inner and outer action; (2) new knowledge is to be brought in relation to prior knowledge so that a new, more differentiated or changed structure of knowledge can be developed; (3) learning is most successful if the learners set goals, are aware of them and monitor their learning process in order to attain these goals; (4) furthermore, learning is seen as a social process, i.e. an interaction between the individual and the environment, where not only cognitive but also affective and social factors are very important. As one of the consequences of this paradigm, the quality of the learning process is seen to be as much responsible for the learning-success as for the quality of instruction. Self-regulation is regarded as the key element for the quality of the learning process (Metzger, 1995a). This change in focus has not only been influencing the theoretical discussion, but also the educational practice in schools as well as in business and industry (Dörig, 1994; Dörig, 1995a; Dubs, 1995; Landwehr, 1995; Reusser, 1994).

Along with this development, the management of human resources in business and industry has for many years been regarded as a similar interaction between personnel and enterprise. The emphasis on the personnel as the entreprise's key value and the furthering and developing of personnel are increasingly being considered a constructive and interactive process, where the needs of the individual and the entreprise meet and strive towards a balance. This view also stresses the importance of personnel acting self-directedly.

The need for self-directed learners is also founded on economical necessities and developments in society (Achtenhagen & Weber, 1995): much of our knowledge has been revolutionised by technology; highly qualified human resources are increasingly being needed; many people are forced to become more flexible with regard to their qualifications; people, confronted with the higher complexity and instability of economy and society, are frightend by the consequences; new technologies make it possible for more people to learn independently from teachers and trainers as well as from time and place. All this forces people to feel responsible for their learning instead of just waiting for suitable and well organised opportunities to learn.

2 The two Meanings of Self-Directed Learning

Without a doubt, self-regulation or self-direction is associated with a large amount of the learner's autonomy . But with regard to the emphasis on self-directed learning as outlined, an important distinction between two interrelating aspects of autonomy has to be made. On the one hand it concerns the the learners' ability to make autonomous decisions about goals and processes of learning

(Zimmermann, 1994), and on the other hand learners must be able to adapt to given teaching-learning environments and to find ways of learning which best suit them. It may astonish the reader that the latter is also regarded by the author as a part of self-direction. But in fact, the above mentioned teaching-learning environments vary a great deal with regard to the degrees of freedom which are given to the learners to make self-directed decisions about learning goals and processes. One could argue that even in a situation which is extremely teacher-centered and accompanied by the transmission of objectively defined knowledge and by corresponding product-oriented exams, the learners should be able to regulate their learning. Therefore, self-direction not only means self-determination, but also flexibility and adaptability.

In accordance with the most recent research about self-directed learning or self-regulated learning, being a highly self-directed learner requires the availability of a rich, broad and deep repertoire of learning strategies, defined as thoughts and activities to create the learning process and to reach the goals; these thoughts and activities have to be highly skilled, self monitored and able to adapt to the situation as well as to the learner and finally have to be based on the learner's will to use learning strategies. (Beck et al., 1995; Dörig, 1994; Metzger; 1989; Reusser, 1994; Weinstein, 1994)

3 Two Approaches to the Further Development of Self-Directed Learning

The current discussion about self-directed learning in Switzerland shows a certain unity as far as its importance and meaning is concerned. Nevertheless there are two main approaches with regard to the question of the sort of methods by which self-directed learning should be developed at all levels and in all fields of the educational system. The first approach focuses on creating a variety of teaching-learning arrangements; in the second approach, learning strategies become a main part of the teaching-learning process.

3.1 Teaching-Learning Arrangements

The main idea of this approach is as follows: the teaching-learning situation in any subject area shall be arranged in a way that the learners are then challenged to apply a rich variety of learning strategies and direct their learning to a high degree by themselves. The name 'learner-oriented methods' expresses this notion well. Some elements may help to explain this approach in more detail:

- The didactic principle 'from the very simple to the more complex' is abandoned and replaced by a rich and complex context or situation, supported by appropriate media like authentic texts and multimedia-packages (Achtenhagen 1995; Dörig, 1995b), where the main knowledge appears in its real complexity or the learners are led to discover the knowledge by themselves. Further 'richness' means that the contexts are as authentic as possible for the learners and varied in many ways in order to promote the transferability (Döring, 1994).

- The question-and-answer approach as a teaching method is nearly or fully replaced by methods or procedures which support a learner-oriented learning, by which self-directed learning is meant. Dubs (1995) gives a corresponding overview about procedures and refers to simulations, projects, workshops and various forms of self-directed learning like individual-work, partner-work, small-group work, group-work and role-play. Various forms of cooperative learning are typical for many of these methods. All these procedures have in common the fact that they do not serve merely as alternative forms to vary a lesson, but create a teaching-learning process in which the learners have to direct a larger part of the learning process themselves, mainly the acquisition of knowledge, but also the evaluation of process and outcome.

- Exams are mainly performance-oriented assessments with regard to a variety of parameters such as cognitive constructs, time and period of assessement, individual-based and group-based assessment, teacher and self-evaluation (Linn & Gronlund, 1995).

- The learners are given the possibility and are forced to choose between a variety of contents and methods. On a macro-level the learners mainly have the opportunity to choose between subjects and topics, on a micro-level they may also choose with regard to topics, procedures, dates and peers.

On the one hand, these trends can be observed in the public school system, starting in primary schools and ending at university level. At this point it might be of interest how in the vocational schools two major elements illustrate this trend. First, in the curriculum of the vocational schools, different subjects like business administration, law and languages are integrated in certain topics and projects during certain periods of the school-year (Capaul, 1991; Schoch & Seitz, 1995). Secondly, in the curricula as well as in practice, those methods with a higher degree of self-direction on the side of the learners such as projects, workshops and practica are strongly emphasised (Institut für Wirtschaftspädagogik & Schweizerische Gesellschaft für Angewandte Sozialforschung, 1996). On the other hand, in the field of adult education - mainly in business and industry - a similar development can be observed which sometimes takes place more intensively and at an even faster pace. Two examples derived from the author's own experience in consulting business and industry about education and training may explain this. In training-policies and training-strategies, procedures can be found which stress the right and the responsibility of the personnel to express their learning-needs and to make choices between different subjects and possibilities of training and education. The increasing importance of self-directed learning is also clearly reflected by the richer variety of methods which are used in training and education, according to the shift of the teaching-learning paradigm mentioned earlier:

- The teacher-centered lecture and seminar style can still be found, but more learner-orientated methods such as projects, case-studies, simulation-games, role-play, suggestopedia (Schoch, 1995), and self-study supported increasingly by the computer (Koller, 1995), have become more and more important in the last decade.

- As an equivalent to the in-house or out-house seminars, learning within real projects and as close as possible to the workplace has become more important.

- The role of the former fulltime instructor or trainer has taken a new profile in which coaching and mentoring are at least as important as teaching.

- Teaching and coaching are no longer the responsibility of professional trainers only, but also of in-house professionals from different subject areas who are often the seniors at the same time. Co-teaching between these two professionals is found to be very helpful in supporting the transfer from the learning situation to the workplace.

Nevertheless, one critical remark has to be made. Wherever these trends end up in the extreme of a strictly learner and workplace-oriented method - mainly caused by the pressure of budget-cuttings - a loss of unity and an overstrain of the learners and professionals seem to take place.

3.2 Learning Strategies and Self-Directed Learning as a Content of Teaching and Learning

Teaching and developing learning strategies, and with that, teaching self-directed learning have increasingly become a subject of discussion and practice in the public educational system of Switzerland. Beck et al. (1995) report on an all in all successful longitudinal field-study in public schools from grade 4 to 7 focusing on the development of learning strategies with emphasis on metacognition. At secondary level II (grade 9 - 13), i.e. in vocational schools, full-time diploma schools and the grammar school, learning strategies have also gained importance during the last few years. There are many schools in which, under different circumstances (i.e. school-classes' counseling, integration into subject-teaching, special courses), the teaching of learning strategies is taking place, based on distinct approaches (Büchel & Büchel, 1993; Frick & Mosimann, 1994; Metzger, 1995a; Metzger, 1995c) which differ in three aspects: (1) the amount by which they support the transfer of learning strategies into concrete school-based contexts; (2) the degree to which they integrate cognitive and non cognitive components; and (3) the degree to which they emphasize the metacognitive, heuristic and strategic aspect, distinct from learning techniques and skills as algorythms. This development is supported by changes in the curricula and the use of methods mentioned above. But only little empirical research exists with regard to these endeavours (Büchel, 1990; Hofer, 1988; Metzger, 1995b). Finally, at university-level some endeavours are made to help the students adapt more easily to the teaching-learning situation which can be characterized - compared to the grammar school - as less guided and controlled, therefore requiring self-directed learning to a higher degree. One or both of two forms of support can be found at different universities: students' counseling, mainly offered by assistants in different subject areas, and courses for beginners about studying at the university. Both forms are present at the University of St. Gallen for example, taught and guided by the author. No corresponding empirical research has been published yet, however some promising results the author gained at the University of St. Gallen will be published.

In the field of continuing adult education - in business and industry as well as in certificate courses and seminars - teaching and developing learning strategies does not yet seem to be a subject of great interest, neither in literature nor in practice, disregarding some seminars for memory training and fast-reading techniques. Nevertheless it seems to be very important that learning strategies -

and by that self-directed learning - are also taught and trained at this level of education. Although the author was not able to find any empirical studies which would prove deficits exist in adults' learning strategies, the existence of such a need can be derived from theory as well as empirical findings from other educational settings: (1) effect studies (Krapp, 1993; Metzger, 1989) show that the teaching of learning strategies seems to increase achievement, but illustrate also that the transfer across different situations seems to be a key-problem; (2) the notion 'continuing' doesn't mean that all adult learners have stayed within an organized learning system since they left the public school system. A national survey for Switzerland shows that about 37 % of the people between the ages 20 and 74 did not take part in any kind of organised continuing education from 1988 to 1993 (Bundesamt für Statistik, 1993). There are many adults - mainly women - who enter the educational system after a break of several years in which they had no or little chance to study systematically in the sense of school learning. And despite the technological revolution and economical challenges, many people are still not forced to be prepared for new professional functions. In both cases it can be supposed that learning experiences and the availability of a repertoire of learning strategies have 'suffered' more or less with regard to school-oriented learning situations. The author's everyday experience in continuing education has shown for example a deficit in strategies to cope with exams or to manage time to learn parallel tasks at the workplace.

These observations and deductions from theory, related empirical research and own experiences led the author - in cooperation with Claire Weinstein and David Palmer from the University of Austin, Texas - to develop instruments and materials by which the quality of the adults' learning strategies repertoire could be diagnosed and self-directed learning could be furthered in those areas where the diagnosis would show significant deficits. What follows is not a final product but an insight into research in progress: (1) a learning strategies model as the theoretical background; (2) the development of an instrument to diagnose learning strategies; and (3) some methodological aspects of teaching and developing learning strategies.

3.2.1 A Model of Learning Strategies

The following model was originally developed for university-level (Metzger, Weinstein & Palmer, 1994a) and secondary-level II (vocational-schools, diploma-schools and grammar school) (Metzger, 1995a; Metzger, Weinstein, & Palmer, 1994b). It is based on three findings of learning theory and research:

- Experts in a subject area not only have the better subject-knowledge but at the same time a repertoire of learning strategies which is richer and better organised than that of novices (Alexander, Schallert, & Hare, 1991).

- In order that knowledge may be applied to different situations, it has to be available in a declarative, procedural and conditional form. This also seems to be the case for knowledge about learning strategies (Dörig, 1994).

- The development of learning strategies is a learning process, and as such, the same attributes which have been described earlier as relevant have to be taken into account.

In the center of the model (Figure 1), different learning strategies can be found which are needed to fulfill learning tasks. First, the learners need cognitive strategies to process information in order to identify important information and to acquire knowledge. Secondly, these strategies find their application in different learning-situations (e.g. different teaching-learning arrangements, and within these typical settings such as reading, note taking, and working in a group; different subject-areas; preparing for and mastering of exams). Thirdly, the quality of knowledge acquisition and of the accomplishment of different learning-situations depends on how far learners are able to form the different learning-situations positively in a self-regulated way. Strategies such as self-motivation, time management, concentration and coping with stress and anxiety belong to this part of the repertoire.

These learning strategies cannot be implemented according to an objectively given schema, but they have to be chosen and performed based on the interaction between an actual, concrete learning-situation (learning task and learning-conditions and constraints) on the one hand, and important attributes of the learner at a certain time and in a certain learning-situation (prior knowledge, personal goals, motivation, learning experiences about strengths, weaknesses and preferences) on the other. Therefore, learners need an extensive awareness of the learning-situation and themselves as learners (for a list of questions for self-reflection see Metzger, 1995c).

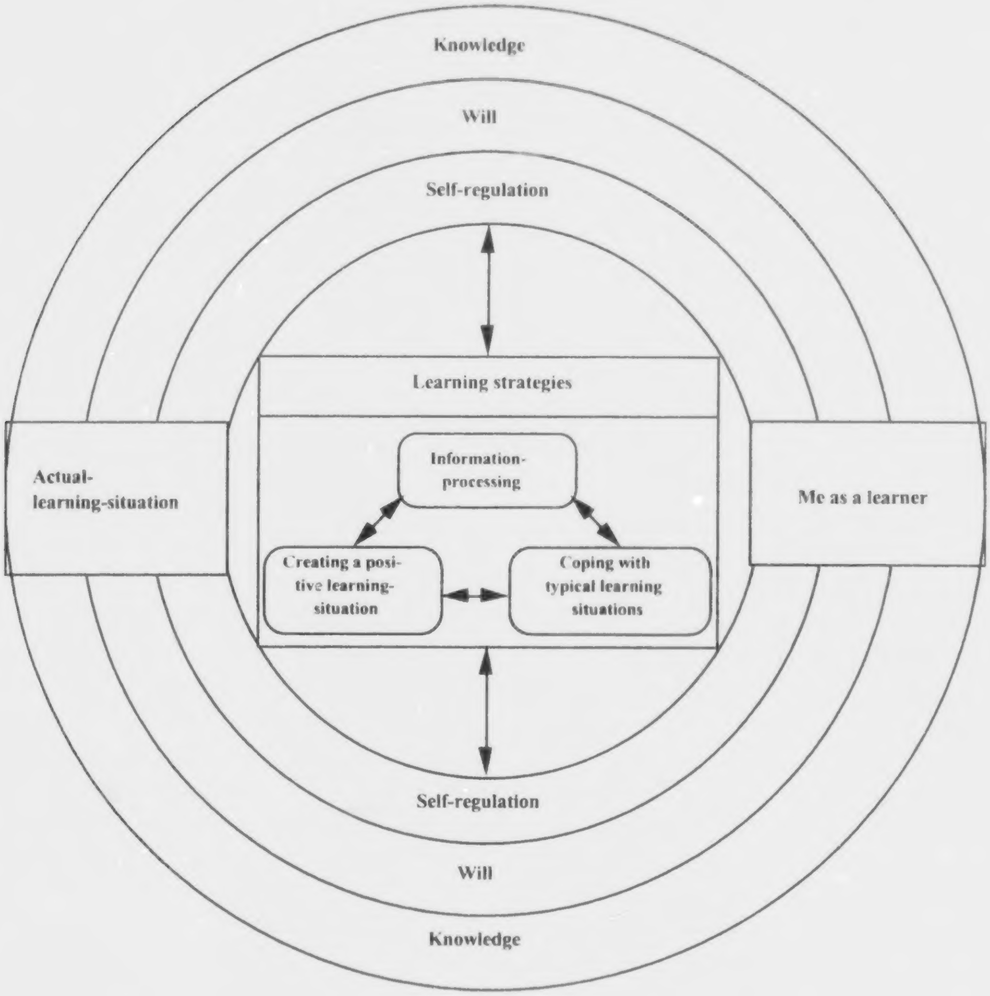


Figure 1. **A model of learning strategies**

How well oriented towards the situation and to the learner the learning strategies are implemented depends on three components: (1) the knowledge about the 'what, how and when' of learning strategies on the one hand, and the knowledge about learning situations and the self as a learner on the other; (2) the will or motivation to work consciously with learning strategies, which interacts with specific strategies of motivation and personal states and traits of motivation related to different elements of a learning situation (subject, difficulty of a task, time constraints, teacher-learner interaction etc.); (3) finally, the metacognitive awareness, monitoring, controlling and adapting of learning strategies.

3.2.2 An Instrument to Diagnose Learning Strategies

In order to diagnose strengths and weaknesses with regard to learning strategies, two main possibilities, in combination with each other, should be applied in practice (Metzger, 1995a). At first, trainers and coaches can observe and analyse the strategic behaviour of the learners and discuss it with them. The more variety and interaction the teaching-learning arrangements offer, the more occasions for this possibility will exist. Later it is recommended to have the learners reflect on their learning behaviour by a learning strategies inventory in the form of a questionnaire. The development of such an instrument is now shown in more detail.

Based on the Learning Strategies Inventory for College students (LASSI, developed by Weinstein, Palmer, and Schulte, 1987) and High-School students (LASSI-HS, by Weinstein & Palmer, 1990), Weinstein and Palmer (1994) published the Strategic Assessment of Readiness for Training (START) which has been designed to diagnose adults' learning strengths and weaknesses with regard to learning strategies. After LASSI and LASSI-HS had been successfully translated into German-language versions (WLI-Schule; WLI-Hochschule) by Metzger, Weinstein, and Palmer (1994b, 1994a) in a joint research project during the past eight years, these authors began to translate START into a German-language version too.

The 'WLI-Betrieb' (the German-language label for START), based on the model of strategic learning characterized earlier, is a 63-item self-report instrument with a 5-point rating scale ranging from 'true of you only in rare instances or never' to 'true of you almost all the time or always'. A completed 'WLI-Betrieb' has scores for nine separate scales with seven items per scale, each of which relates to one of the three important groups of learning strategy (information processing, creating a positive learning-situation and coping with typical learning situations), all of them including aspects of knowledge, will and self-regulation. The nine scales are: attitude, motivation, time management, concentration, anxiety, identifying important information, knowledge acquisition, monitoring learning and learning in Groups (cf. Table 1 for a description and sample items from each scale). The first eight scales were taken over from the American version while 'learning in groups' was created especially for the German-language version in order to include one further typical learning situation which seems to be related to self-directed learning.

Table 1

WLI-Betrieb: Scales and sample items

Scales	measure ...	Sample items
Attitude	general attitudes toward training and the degree to which it is valued.	I enjoy training programmes that help me to develop knowledge and skills that will be useful to me in my work.
Motivation	willingness to participate in training and complete the tasks and work involved.	I try hard not to miss any of the sessions during a training programme.
Time Management	participants' ability to create and use schedules effectively in a training setting.	I have trouble arranging my time commitments so that I can participate in training.
Concentration	general ability to concentrate, focusing and maintaining attention on training-related activities and tasks.	I find that during training sessions I think of other things and don't really listen to what is being presented.
Anxiety	the degree of confidence or anxiety someone experiences about performing well in learning situations.	I worry that I will not learn the material covered during training.
Identifying Important Information	how well participants select important information from training to learn and transfer to the work setting.	Often when going over training materials I seem to get lost in details and "can't see the forest for the trees".
Knowledge Acquisition	methods for acquiring new knowledge and skills in a manner that will facilitate their retention and later use in the work setting.	I translate what I am studying in my training materials into my own words.
Monitoring Learning	the degree to which participants keep track of their learning and whether or not they are meeting their performance goals.	I stop periodically while studying training materials and mentally go over or review what was presented.
Learning in Groups	the degree to which participants are willing and able to learn in a group.	When I'm learning together with others, I decide with them how we ought to proceed (goals, schedule etc.).

Translating LASSI and LASSI-HS into German-language versions has already taught the authors how translating such an instrument is not merely a matter of simply translating one word with another, but also involves taking into consideration idioms and jargon in the different languages as well as differences in educational practices such as the role of assessment and feedback, the quality of study material or the amount of self regulation in the process of goal setting in continuing education. After having adapted the American to a German-language version through several iterations between the authors, specialists in English and German as well as specialists in the field of continuing education, several drafts were given to hundreds of adult learners in continuing education, mainly in business and industry, in order to get qualitative feedback and psychometric properties of the scales. Following even more fine tuning, the final version was created and given to a further 250 adult learners. As is shown in Table 2, the data from the American (Weinstein & Palmer, 1994) and the German-language samples shows similar good and stable reliabilities. With regard to the section 'Learning in groups', which is only included in the German-language version further analysis is needed to develop a more consistent scale; at present, the seven items appear to measure at least two different constructs. A comparison of the means of the eight common scales shows all in all slightly higher means in the Swiss sample accompanied by some lower standard deviations. To the authors it seems to be too early to draw conclusions with regard to statistical or practical relevant differences between the two samples. More data needs to be gathered on both sides. Nevertheless, it is of great interest that the comparable scores, drawn as a profile of learning strategies (Figure 2), show quite similar shapes. This seems to be an indicator for a good cross cultural validity of the two versions. But again, more data of different groups, e.g. differentiated by sex, age, learning experience, professional status is needed for purposes of comparison.

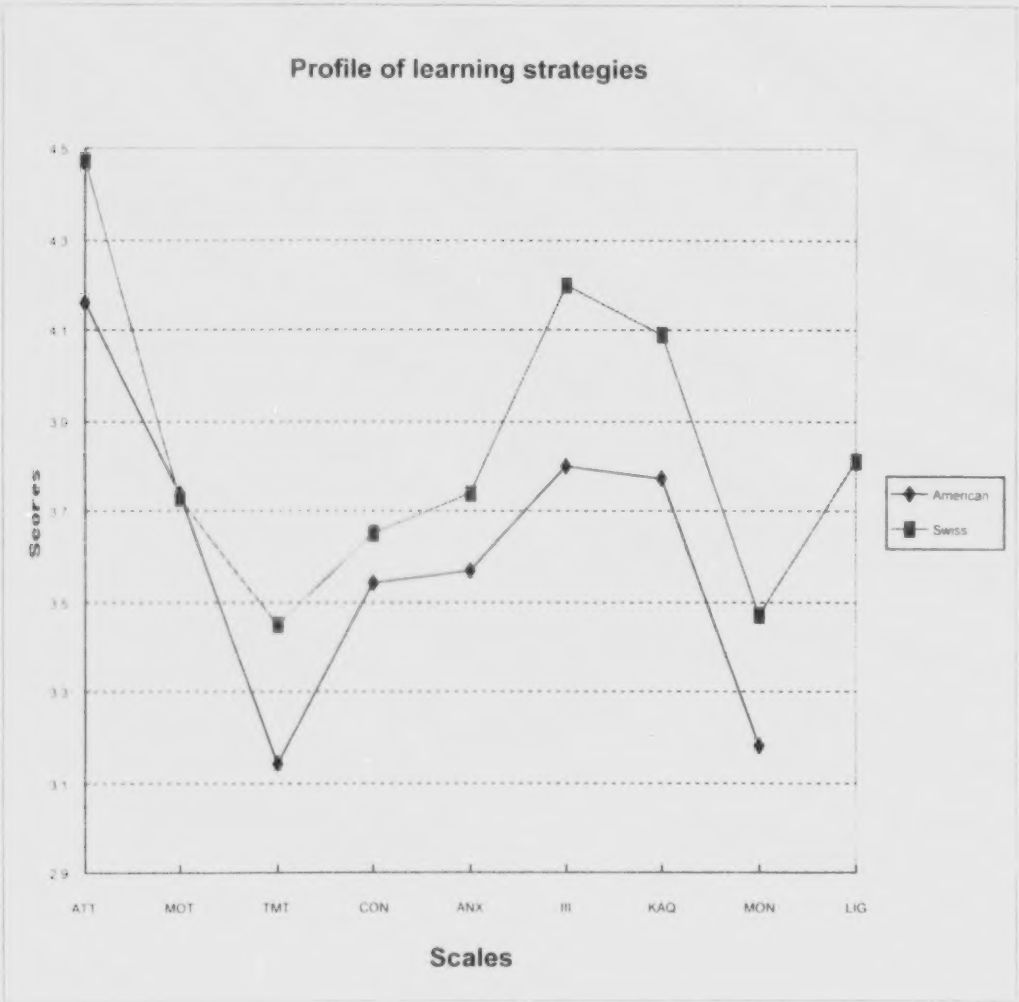
Table 2

WLI-Betrieb: Psychometrics

Psychometrics	Mean		Standard Deviation		Coefficient Alpha	
Version Scales	American (n = 226)	Swiss (n = 238)	American	Swiss	American	Swiss
Attitude (ATT)	4.16	4.47	0.56	0.44	.71	.74
Motivation (MOT)	3.74	3.73	0.56	0.53	.65	.64
Time Management (TMT)	3.14	3.45	0.66	0.64	.76	.80
Concentration (CON)	3.54	3.65	0.67	0.57	.83	.75
Anxiety (ANX)	3.57	3.74	0.83	0.77	.87	.85
Identifying Important Information (III)	3.80	4.20	0.56	0.47	.75	.72
Knowledge Acquisition (KAQ)	3.77	4.09	0.68	0.55	.78	.79
Monitoring Learning (MON)	3.18	3.47	0.65	0.61	.78	.47
Learning in Groups (LIG)	--	3.81	--	0.46		

Figure 2.

Profile of learning strategies of an American and Swiss sample



There are two possibilities for diagnosing strengths and weaknesses in learning strategies. On the one hand, the rawscore in each category can be compared to the possible maximum. The larger the difference, the weaker this strategy seems to be. Interventions are indicated especially in the categories with the lowest scores. Two problems with this procedure have to be mentioned: firstly, it is quite subjective to define a weakness as a certain difference from the theoretical maximum, and secondly, the same differences in two different scales does not necessarily mean deficits of an equal amount nor of equal importance. In order to overcome these disadvantages, the scores may be compared with those of a reference group (e.g. of the same age or the same professional status). Following this group-oriented comparison, actions should emphasize learning strategies where a negative difference to a group-oriented score (mean or a certain percentile) seems to be significant. The subjectivity of this procedure lies in the choice of a suitable reference-norm. Considering the disadvantages of both possibilities, it is recommended that strengths and weaknesses in the repertoire of learning strategies should be determined by combining observation and use of a standardised inventory. The latter produces quantified indicators about strengths and weaknesses which have to be interpreted more deeply in a qualitative, hermeneutic way, mainly by an intensive dialogue with the learner. To use an inventory is not the end but only a possible starting point of diagnosis and therapy. First feedback from learners who answered the inventory during the field-testing of the instrument were very positive. They mainly confirmed that by answering the questionnaire they had become aware once again of their learning behaviour. But at the same time, many learners asked if they had any chance of improving their strategies.

3.2.3 *Supporting the Improvement of Learning Strategies in Continuing Education*

Although there is some evidence that the teaching and developing of learning strategies seems to have a positive effect on achievement (for an overview see Krapp, 1993; Metzger, 1995a), almost no research could be found which focuses on continuing adult education in Switzerland, as has been mentioned above. The need for research exists, especially for long term field studies in different natural settings. Nevertheless, derived from the existing international research about learning strategies and strategies-training in general as well as from the actual learning theory, some programmatic devices with regard to the teaching and developing of a repertoire of learning strategies can be formulated.

In order to support the transfer, the learning strategies in question should be developed within contexts that are meaningful and important for the learners. Some possible examples are time management for a part-time course over a longer period which is hard to combine with the workload at the workplace, preparation for a challenging certification-exam, planning and realization of a group-project, organising several self-study materials along with a textbook used during instruction, or elaboration and organisation of knowledge which the learner should understand and finally recall.

Since contexts can vary significantly (by subjects, time, kind of course, adressee etc.), the most successful approach seems to be a combination of a systematic instruction of these strategies (e.g. an intensive course of several units, sometimes spread over a longer period) and their integration into many contexts. If a choice between the two approaches has to be made because of constraints such as time, money, or motivation of possible adressees, it is an integration which is to be recommended. In this case trainers should coordinate - including the learners in this process - who is going to deepen what kind of strategies for which situations at what time. Therefore the trainers have to have a certain common knowledge about and view of a successful repertoire of learning strategies without forcing an absolute unity. Since teachers are learners themselves with their own different learning experiences and preferences, they should include this diversity.

The development of learning strategies is not a single step, but an interactive multi-step process. As a model, five stages can be differentiated: (1) learners must become aware of their need to improve certain learning strategies (e.g. by observing their learning behaviour in different learning situations as well as by answering the inventory described here and by discussing observations and scores in the inventory with either other learners or the trainer); (2) learners should generate ideas of improving learning strategies, for example by comparing past learning experiences in similar situations or by creating new ways of acting in a situation; (3) then, the need to broaden the repertoir and to proceed elaborating on certain strategies may arise. Often learners will also expect an input from the trainer. The learning strategies model (Figure 1) can serve as a framework with which to organise the development of knowledge about learning strategies and to emphasise the awareness for strategic aspects in self-directed learning; (4) the implementation has to be combined with the third stage in order to deepen the integration of the declarative, procedural and conditional knowledge about learning strategies; (5) finally, the continuing evaluation of the learning-process and product with regard to the efficiency and effectiveness of learning strategies is needed. Especially in the beginning of the implementation the evaluation will be monitored by the trainer, but ought increasingly to be carried out by the learners, because in the end, self-evaluation becomes a part of self-directed learning.

Within this 5-step process the role of the trainer or teacher may vary, depending mainly on how far the learning strategies repertoir is already developed. On the one hand, the trainer can build these steps into a direct instruction approach. This means that he or she will monitor the learners through these steps by dialogue and exercises in both group-settings and single-work. The trainer will also include the process of modeling in the sense that he or she demonstrates personally a process of strategic learning in a concrete learning situation and makes clear the decisions and procedures by thinking aloud. Instead of modeling him or herself, the trainers can also encourage learners to model their strategies for other learners. It is important that the trainer transfers more and more freedom and responsibility to the learners according to the process of scaffolding over coaching to fading (Dubs, 1995). On the other hand, the trainer can increasingly include the five steps into teaching-learning arrangements which enforce self-directed learning. Through this, self-directed learning as a teaching-learning arrangement on the one hand and as a content on the other hand quickly becomes integrated. This is more than just wanting to develop self-directed learning by 'throwing people into the water of self-directed learning without preparing them for it'.

As is shown in this report, empirical research with regard to self-directed learning in continuing education is only rarely found in Switzerland. Nevertheless, self-directed learning is a current topic in the educational discussion, inspired by international development in research and practice. In daily practice, self-directed learning is mainly an attribute of teaching-learning arrangements. Self-directed learning in the form of learning strategies as a content of teaching and learning - based on a diagnosis of the need for further development of the learners repertoire - is much less developed. That is why in the second part of this report an insight into research in progress was given.

References

Achtenhagen, F. (1995). Möglichkeiten einer wissenschaftlich begründeten Stützung unterrichtlichen Handelns. In Ch. Metzger & H. Seitz (eds.), Wirtschaftliche Bildung (S. 221 - 247). Zürich: SKV.

Achtenhagen, F., & Weber, S. (1995). The Cognitive Science Orientation of Göttingen. Working-paper. Helsinki: Developing Teacher Education for Commercial Training (DETECT), Finnish Business College.

Alexander, P. A., Schallert, D. L., & Hare, V. C. (1991). Coming to terms: how researchers in learning and literacy talk about knowledge. Review of Educational Research, 61, 315 - 343.

Beck, E., Guldiman, T. & Zutavern, M. (1995). Lernende als Lernexperten. In R. Dubs & R. Dörig (eds.), Dialog Wissenschaft und Praxis (S. 260 - 267). St. Gallen: Institut für Wirtschaftspädagogik.

Büchel, F. P. (1990). General and Differential Effectiveness of Learning-to-Learn Programs. In J. M. Pieters, K. Breuer, & P. R. J. Simons (eds.), Learning Environments (pp. 235 - 252). Berlin: Springer.

Büchel, F. P., & Büchel, P. (1993). Das Eigene Lernen Verstehen. Russin/GE: Cognitive Education Center.

Bundesamt für Statistik (1993). Weiterbildung in der Schweiz. Erste Resultate des Mikrozensus Weiterbildung. Bern: Bundesamt für Statistik.

Capaul, R. (1991). Das Wahlpflichtfach B 'Wirtschaft/Recht/Gesellschaft und Informatik' im neuen Lehrplan für den kaufmännischen Angestellten als Beispiel einer Schulinnovation: Probleme bei der Einführung und Bestandesaufnahme. Dissertation, Universität St. Gallen, Nr. 1237. Hallstadt: Rosch-Buch.

Capaul, R., Schoch-Perret, E., & Seitz, H. (1995). Didaktik, Methodik und Organisation des Interdisziplinären Unterrichts am Beispiel der kaufmännischen Berufsschulen. Schweizerische Zeitschrift für Kaufmännisches Bildungswesen, 89, 133 - 144.

Dörig, R. (1994). Das Konzept der Schlüsselqualifikationen. Ansätze, Kritik und konstruktivistische Neuorientierung auf der Basis der Erkenntnisse der Wissenspsychologie. Dissertation, Universität St. Gallen, Nr. 1541. Hallstadt: Rosch-Buch.

Dörig, R. (1995a). Handlungsorientierter Unterricht - Konzept und Grundsätze der Umsetzung im Unterricht. Wirtschaft und Gesellschaft im Beruf, 20, 205 - 214.

Dörig, R. (1995b). Handlungsorientierter Unterricht - Ein Unterrichtsbeispiel aus der Schweiz zum Thema 'Wirtschaftsordnungen'. Wirtschaft und Gesellschaft im Beruf, 20, 246 - 254.

Dubs, R. (1995). Lehrerverhalten. Ein Beitrag zur Interaktion von Lehrenden und Lernenden im Unterricht. Zürich: SKV.

Frick, R., & Mosimann, W. (1994). Lernen ist lernbar: Eine Anleitung zur Arbeits- und Lerntechnik in Schule, Aus- und Weiterbildung. Aarau: Verlag Sauerländer.

Institut für Wirtschaftspädagogik, & Schweizerische Gesellschaft für angewandte Berufsbildungsforschung (1996). Evaluation von schweizerischen Berufsmaturitätslehrplänen. Unveröffentlichter Projektbericht zuhanden des Bundesamtes für Industrie, Gewerbe und Arbeit.

Hofer, R. (1988). Integration von Lern- und Arbeitstechnik in den wirtschaftlichen Unterricht der Mittelschule am Beispiel der Textverarbeitung durch Strukturierung. Dissertation, Universität St. Gallen, Nr. 1054. Bern: Fischer

Koller, W. (1995). Das Design computerunterstützter Lehr-/Lernarrangements - Modellrahmen, Integration und Fallstudie. Dissertation, Universität St. Gallen, Nr. 1665. Hallstadt: Rosch-Buch.

Krapp, A. (1993). Lernstrategien: Konzepte, Methoden und Befunde. Unterrichtswissenschaft. Zeitschrift für Lernforschung, 21, 291 - 311.

Landwehr, N. (1995). Neue Wege der Wissensvermittlung: ein praxisorientiertes Handbuch für Lehrpersonen in der schulischen und beruflichen Aus- und Fortbildung. Aarau: Verlag Sauerländer.

Linn, R. L., & Gronlund, N. E. (1995). Measurement and Assessment in Teaching (7th ed.). Englewood Cliffs, NJ: Prentice-Hall.

Metzger, Ch. (1989). Lernstrategien. Wie fördern Lehrer das selbständige Lernen? Zeitschrift für Berufs- und Wirtschaftspädagogik, 61, 344 - 359.

Metzger, Ch. (1995a). Lernstrategien - eine didaktische Herausforderung. In Ch. Metzger & H. Seitz (eds.), Wirtschaftliche Bildung (S. 293 - 321). Zürich: SKV.

Metzger, Ch. (1995b). Selbständig lernen. In R. Dubs & R. Dörig (eds.), Dialog Wissenschaft und Praxis. (pp. 240 - 259). St. Gallen: Institut für Wirtschaftspädagogik.

Metzger, Ch. (1995c). WLI-Schule: Wie lerne ich? Eine Anleitung zum erfolgreichen Lernen für Mittelschulen und Berufsschulen. Aarau: Verlag Sauerländer.

Metzger, Ch., Weinstein, C. E., & Palmer, D. R. (1994a). WLI-Hochschule: Wie lerne ich? Lernstrategieninventar für Studentinnen und Studenten. Aarau: Verlag Sauerländer.

Metzger, Ch, Weinstein, C. E., & Palmer, D. R. (1994b). WLI-Schule: Wie lerne ich? Lernstrategieninventar für Schülerinnen und Schüler. Aarau: Verlag Sauerländer.

Metzger, Ch., Weinstein, C. E., & Palmer, D. R. (in preparation). WLI-Betrieb: Wie lerne ich? Lernstrategieninventar für Erwachsene. Aarau: Verlag Sauerländer.

Reusser, K. (1994). Die Rolle von Lehrerinnen und Lehrern neu denken. Beiträge zur Lehrerbildung, 11 (1), 19 - 39.

Schoch-Perret, E. (1995). Ganzheitlichkeit in der Pädagogik und im Unterricht - einige Gedanken. In Ch. Metzger & H. Seitz (eds.), Wirtschaftliche Bildung (S. 279 - 292). Zürich: SKV.

Shuell, T. J. (1986). Cognitive conceptions of learning. Review of Educational Research, 56, 411 - 436.

Weinstein, C. E. (1994). Strategic Learning/Strategic Teaching: Flip Sides of a Coin. In P. R. Pintrich, D. R. Brown & C. E. Weinstein (eds.), Student Motivation, Cognition, and Learning (pp. 257 - 273). Hillsdale, NJ: Lawrence Erlbaum Associates.

Weinstein, C. E., & Palmer, D. R. (1990). LASSI-HS: Learning and Study Strategies Inventory. Clearwater, FL: H & H Publishing.

Weinstein, C. E., & Palmer, D. R. (1994). Strategic Assessment of Readiness for Training (START). Users Manual. Clearwater, FL: H & H Publishing.

Weinstein, C. E., Palmer, D. R., & Schulte, A. C. (1987). LASSI: Learning and Study Strategies Inventory. Clearwater, FL: H & H Publishing.

Zimmermann, B. J. (1994). Dimensions of Academic Self-Regulation: A Conceptual Framework for Education. In D. H. Schunk & B. J. Zimmermann (eds.), Self-Regulation of Learning and Performance (pp. 3 - 21). Hillsdale, N.J.: Lawrence Erlbaum Associates.

Philippe Carré

Self (-Directed) Learning in France

1 Self-Directed Learning and 'Autoformation'

Whoever addresses the issue of self-directed learning in the French professional training context is immediately faced with two questions of terminology.

The first one is purely lexical : Self-directed learning could be translated into French literally, thus stressing the fact of 'directing' one's learning ('apprentissage autodirigé'), in which case the corresponding body of knowledge (and literature) will be alarmingly sparse in France. Self-directed learning could also be considered as the anglo-saxon equivalent of a more general 'learning by oneself', which opens up a vast and expanding field of practice and research on 'l'autoformation'. By opting for the latter solution (self(-directed) Learning = autoformation), we shall have to remain aware that, although lots of similarities exist between the two notions, we are quickly skipping an important nuance in the English form (self-directed learning). 'Autoformation', thus, would be more adequately translated by 'self-learning', 'self-training', or even 'self-development'. In spite of this important difference, both French and anglosaxon academic and professional networks in these areas seem to deal fundamentally with the same notion(s), in practice if not in theoretical discussion. The same lack of conceptual clarity pervades both languages and most of the theory and practice expressed in each. Hence our second problem.

Just as in North American academic or professional groups dealing with self-directed learning (Long, 1991), the French scene is pervaded simultaneously with a large 'consensus' and considerable 'conflict' as to the meaning of the word 'autoformation'. Beyond an initial agreement on the necessity for professional education to concentrate on ways to foster autonomous, independant, responsible learning in adults so as they can gradually learn and grow 'by themselves' ('auto' - formation), differences in orientation appear. Today, half a dozen different definitions of 'autoformation' can be found in the French literature, corresponding to as many different types of educational practice. These will be detailed later.

2 Historical Overview

Some roots of the various concepts of 'autoformation' (hereafter 'self-learning'[1]) can be found deep in the history of French educational thought, going back as far as Descartes (1596-1650) and his famous 'cogito', Montaigne (1533-1592), whose 'Essais' is tantamount to a lifelong essay on self-learning, or Condorcet, who advocated 'the art of self-instruction' in his 1792 Report on the Organisation of Public Instruction.

The term 'autoformation' itself seems to have been coined in the wake of the lifelong education movement during the 60s and the 70s. Some traces of a fleeting interest in 'self-managed adult education' can be found at the European level in the mid-seventies (Conseil de l'Europe, 1975). At the same time, three French educationalists contributed to the launching of the notion, whether as an instructional method ('l'autoformation assistée', Schwartz, 1973), an independent learning habit ('l'autoformation par le livre', Dumazedier, 1973) and a principle of the learning society (Dumazedier, 1978) or a multi-faceted and ambiguous educational model (Pineau, 1978). At this time, the discreet emergence of the self-learning idea could be read as 'an ideological mechanism', 'a renewal of old trends towards individualized instruction' or 'a perspective for the development of lifelong education' (Pineau, 1978). To a large extent, that initial analysis remains accurate today.

The next step in the gradual emergence of the self-learning iceberg within the adult and continuing education field in France was the publication of a collection of 13 articles on the topic in a single volume (edited by Dumazedier, 1985). For the first time, self-learning appeared as a common paradigm for research and practice in various fields: school, leisure, companies and the professions, voluntary organizations and retirement. All ages of life, all institutions and all social groups were demonstrating their interest in this new, somewhat radical approach to education.

Throughout the 80s and early 90s, autoformation has been the theme of many an innovation in companies, private and public sector continuing education organisations (Carré, 1993). Resource centres, individual multimedia learning programmes, learning workshops and networks, etc. have been the 'solid' facet of the development of autoformation practice, which also entailed the use of life stories, learning contracts, learning project methodology and self-directed learning facilitation techniques. Simultaneously, several initiatives contributed to give a larger audience the themes of self-learning and self-development. Companies in the banking, transportation, electronics or telecommunications sectors started to make large-scale self-learning experiments known to the general public (Caisses d'Epargne, Bull, Renault, UAP, Air Inter, Société Générale, etc.). New educational organizations were created, whether they be collective self-learning workshops ('Ateliers Pédagogiques Personnalisés') or local learning exchange networks ('Réseaux d'Echanges Réciproques de Savoirs').

---

[1] By using self-learning as the least unsatisfactory equivalent of *autoformation*, we intend to differentiate somehow the larger French notion from the more specific anglosaxon "self-directed learning".

In 1992, several colleagues involved on a large scale in autoformation, both on the practical and theoretical front, decided to create an informal, small-scale, flexible network devoted to the development of self(-directed) learning concepts in French adult education systems. The GRAF ('Groupe de Recherche sur l'Autoformation en France') was born and soon dedicated itself to the organisation of the First European Conference on Self-learning, which took place in Nantes in 1994, to be followed by a second similar event in Lille in 1995[2]. Both gatherings were the basis for two important volumes including most of the papers of the Conferences (Pineau et al., 1995; Carré, Mlékuz & Poisson et al.,1996). A wealth of books, magazines and journals devoted themselves to the study of self-learning in 1995, to the extent that it was labelled 'The year of self-learning'.

From 1985 to 1995, the development of self-learning research and practice was almost exponential in France. Today, close to 250 research articles and books have been produced (Richardot, 1995); half a dozen Ph. D. dissertations dealing with the subject are on their way; and hundreds of practitionners and researchers gather at the yearly conferences on this topic. Within business and industry, training officers and human resources managers seem to integrate self-learning concepts into their training formats with varying degrees of success, mostly through setting up learning resource centres. The learning organisation idea, a close relative of professional self-learning, is taking off and drawing more and more interest from trainers, consultants and managers.

In spite of, or rather thanks to, its conceptual vagueness, self-learning is becoming a very successful notion in France. One can see several main reasons for this recent, but consistent, popularity.

---

[2] The Third European Conference on Self-learning took place in Bordeaux, France in November 1996

3 Why is Self-Learning so Popular Today ?

Four main reasons seem to converge today and give credit to the notion that self-learning is becoming the 'educational paradigm of post-modern economies', as G. Pineau (1992) wrote.

3.1 A Way to boost the Productivity of Training

First and foremost, in times of heavy budgetary constraints, educational managers are pressured to raise the level of productivity of their training endeavours. In front of the paradox of growing needs and stagnating or dwindling resources, the equation can be solved either by a steep drop in training expenses or by a net increase of the pay-off in terms of learning outputs. More and more decision-makers are tempted by the self-learning concept for one of these two reasons, or both. 'Learning by oneself' should, in theory at least, represent a way to lower costs (of teaching personnel in particular). Yet research and experiments in that area, however empirical they may be, seem to prove that self-learning goes hand-in-hand with a renewal of instructional delivery systems, which is at least as costly as face-to-face teaching. A more serious source of improved productivity for training systems lies in the second part of the above proposition: it is quite probable that learning systems based on the central concept of self-learning would in the long run breed more productive results than traditional training formats, because of the heavy reliance of the former on learner autonomy and responsibility.

3.2 Bringing Education in Line with Technological Development

An obvious source of change in the way people have looked at work and education for the last 15 years is the global development of information technologies. Computers have thus become, whether we like it or not, essential partners at work, but also in education and leisure. Many companies have developed learning systems geared towards their global information systems. Computer assisted learning (CAL), computer-based training (CBT), individualized multimedia programmes and learning centres, now the Internet have, in turn, been held as more or less revolutionary instruments in the world of training. Beyond the accelerated introduction of those 'new technologies' into the various spheres of our professional and private lives, one could say our global culture of training and learning has undergone a massive change. Technological development has affected millions of jobs and qualifications, fundamentally changing the requested competencies to give the lion's share to new abilities, in which a 'self-learning competency' appears as a major asset (Nyhan et al., 1991). The modern technological employee is bound to become a 'knowledge worker' whose learning will have to be permanent, autonomous and self-directed. Self-learning thus appears as a privileged 'paradigm' to develop educational systems that are in line with ongoing technological evolution, both in terms of training and work.

3.3 A Focal Point for Innovation in Training

For many adult educators, trainers and consultants, self-learning has become a focal point for innovation, against the backdrop of repeated disillusions with 'le stage', the archetypal format of professional training in France (one or several one-to-three days group seminar on professional issues). Scepticism and weariness have settled in for a few years, in front of permanent issues of absenteism, routinization, lack of measurable results and costs of traditional training services. Hence practitionners are intent on inventing new ways to train and to learn, for which self-learning is often seen as the crucible of renewal. To many a trainer, facilitation of self-learning appears as the antidote to the well-known negative effects of classical, transmissive, other-directed learning (or to its lack of positive effects). This quest for autonomy-supportive training methods is not new in itself in France. It is supported by a long tradition of 'active' or 'new' pedagogical methods in primary and secondary education with names like those of Freinet, Decroly or Montessori springing to mind. The notions of cooperative learning, group-work, democracy in the classroom, project-work, non-directive teaching, etc. have thus laid the foundations on which self-learning ideas are able to develop today.

3.4 Autonomy as a Value

Last, but not least, self-learning is in keeping with today's value system in France (and most Western countries), in as much as it promotes the value of autonomy which is one of the few ideological shelters our societies have managed to keep. As has been fully demonstrated by Dumazedier (1995), modern times have been the era of a gradual inversion of the power relation between people and social institutions. 'Obedience to one's law', as Rousseau defined autonomy, has become a key value of modernity, not to be confused with independance or isolation. 'The traditional individual', states Dumazedier, brought to heel by the discretionary power of institutions, has become an active, participatory social subject who can negociate institutional power.

The search for increased productivity in training, the need to bring education in line with the information-technology based communication and production systems, the thirst for pedagogical innovation and the rise of autonomy as a consensual social value, all converge to explain why the global idea of self-learning is developing in so many areas of adult and professional education today.

Nevertheless, as was briefly mentioned above, this surge of interest is fraught with ambiguity, as several (sometimes conflicting) definitions of self-learning can be identified in practical enterprises and research literature, beyond the general principle of learning by oneself.

4 Research on Self-Learning in France: A 'Galaxy' of Notions

On the basis of several recently published works on the various understandings of self-learning in France (Galvani, 1991), in Europe (Nyhan et al., 1991; Dumazedier et al., 1995; Carré, Mlékuz & Poisson et al., 1996) and at the international level (Carré, 1992), five major points of view seem to prevail in France and, to a certain extent, in Europe as well as in North America. Each will presently be summarized, and examples of the relevant pieces of research provided.

Each of these points of view reflects the choice of a privileged perspective on self-learning, both in research and practice, which makes each of the following 'planets' more complementary than opposed to the others. Each of these perspectives focuses on one specific angle of the self-learning phenomena, whether it be a disciplinary preference, a definition, a specific field of application or an epistemological stand.

4.1 The Radical Approach: Autodidaxy

Historically, the origins of present-day self-learning go back to the phenomenon of autodidaxy, or learning as radically separated from educational agents and organisations. Several famous authors (Sartre, Flaubert) long ago depicted these somewhat pitiful types of lonesome, obsessive and sometimes frankly ridiculous self-learners. Yet, beyond their image as self-willed individuals trying to compensate for an initial lack of educational capital, autodidacts have gradually gained legitimity and respect. Several studies have made the phenomena related to autodidaxy available to researchers or even the general public: a doctoral dissertation on Brittany's autodidact managers (le Meur, 1993), a journalistic survey of ten famous autodidacts, called 'The school of life: autodidact France' (Marion, 1993), a sociological research programme on university students without formal academic training (Poliak, 1992). By definition, as this 'radical' notion of self-learning entails a complete break from educational institutions, it would be difficult to have a direct grasp of what autodidaxy practice is in France, so that published reports and essays are the only sources of information available on the phenomenon.

4.2 The Existential Approach: Learning to Be

Central to the development of an 'existential' concept of self-learning are the works of Pineau, and particularly his initial research entitled: Producing one's life: self-learning and autobiography (1983). 'Existential self-learning' has been defined by Pineau as a process of 'the formation of oneself by oneself', through a thorough conquest of one's power to learn and develop. Sometimes called 'bio-cognitive', this approach of self-learning aims at 'learning to be', according to Faure's original formula. This approach is based on an epistemological quest for the meaning of life and the living, and aims at lifelong development of the self. In terms of practice, there is a wealth of techniques of investigation, training and self-development corresponding to this approach: life stories, autobiographies, blazons (Galvani, 1991), educational narratives, etc., that all concur to help people develop or restore a sense of their own meaning and worth.

4.3 The Educational Approach: Facilitating Autonomous Learning

Perhaps the most widely developed image of self-learning in France is the caricature of the lonesome learner in front of a computer assisted learning programme, struggling with himself and the machine in almost complete isolation from teachers and the rest of the world. Although this view is still widespread in business and industry, training professionals have now come to the conclusion that, in learning, autonomy is to be supported. Hence the gradual implementation of new approaches to training that are based upon a kind of reversal in roles. The trainer's duty is no longer to transmit information, while the learner's is to listen and register; the former now has to organise an environment to facilitate the latter's acquisition of knowledge. Beyond the mere exchange of words, control of the learning situation has changed hands, with the learner being restored in his leadership. This inversion entails a host of modifications in the training set-up, whether architectural (creation of resource centres), or in terms of provision of contents (individualisation/modularisation of programmes), or of changing competence (training of 'helpers' or 'facilitators') (Poisson, 1996). Numerous studies have focused on thes various facets of self-learning as a new approach to educational technique, using several names: individualised, flexible, open, multimedia, training (Carré, 1992). Likewise, innumerable experiments and innovations in industrial or educational settings have been launched, without any large-scale survey or evaluation of results so far.

4.4 The Social Approach: Learning through Social Groups

As a kind of complement to the previous approach, the social perspective on self-learning focuses on those phenomena of 'learning by oneself' that take place in institutions, but not in educational ones. The social approach of self-learning is thus simultaneously distinct from the study of autodidaxy (where no institution plays a role in the learning) and from the educational approach (where the development of self-learning is part of the educational institution's project). Several kinds of self-learning practices can thus be identified and analysed in a 'purely' social context: learning networks, learning organisations, study circles, self-managed learning groups, etc. Here, self-learning happens in and through belonging to various types of social groups: companies, voluntary organisations, trade unions, clubs, community centres, religious or political circles. The contents and finalities of learning may be cultural (Portelli, 1993) or professional (Moisan, 1993), leading towards adjacent themes and types of action, like 'reciprocal learning exchange networks' (Héber-Suffrin, 1993) or 'organisational learning' (Moisan, in Pineau et al., 1995). Mostly co-operative or collective, these types of self-learning endeavours are characterised by the central nature of social relations in the process of self-learning.

4.5 The Cognitive Approach: Learning to Learn

This approach is perhaps the closest to the dominant themes of self-directed learning literature. Two main avenues can be distinguished here. The first is strictly cognitive and can be summarized in the nowadays famous formula 'learning to learn'. In France, practical and theoretical efforts in this area have led to the development of numerous studies, methods and techniques to help people learn by themselves and improve their own learning habits, learning techniques or, more globally, to develop their cognitive abilities ('Ateliers de raisonnement logique', 'Tanagra', 'Entraînement mental', etc.) (Sorel et al., 1987). The second option within this cognitive approach of self-learning is concerned with the motivational (or volitional) aspects of self-learning, or what Long calls the 'psychological dimension' of self-directed learning. Such concepts as learning project, self-direction, control of learning, motivation to learn, etc., are being analysed within this perspective (Carré, 1995). On the practical side, development of learning contracts, learning projects, tools to measure or facilitate self-direction in learning are being developed or monitored.

5 Perspectives of Self-Learning in France

As was indicated above, several reasons account for the recent surge of self-learning in the French adult education world. In theory as well as in practice, there are many signs today that the 'self-learning galaxy' is bound to expand and thrive, under the condition that some ethical considerations are taken into account and turned into safeguards for action in this new, vast and stimulating field.

5.1 Perspectives for Research into Self-Learning

Given the accelerating pace of contributions to research on the theme of self-learning in France over the last decade, it is expected that the coming years will see the continuous development of existing tracks of enquiry, and the blooming of the most advanced research and theory. The annual European Conference on Self-learning, now a regular and looked forward to event, will beat the time for practical developments and research advances alike. The present book, as well as several others already on the drawing board, will help give emerging views of self-directed learning solid theoretical backing. All of the five main perspectives on self-learning briefly outlined above will undoubtedly benefit from the results of research programmes and doctoral dissertations already in progress. An inter-university yearly doctoral seminar, starting in 1996, will help cross-fertilize the field. But in spite of these promising prospects, several steps may have to be taken by the research community in order to guarantee an optimal production in this domain.

Some of these steps are as follows: eliciting the common paradigm that unites the various perspectives of self-learning; accepting the multiple concepts lying behing the notion of 'autoformation' as the expression of different, sometimes complementary, sometimes contradictory views of what it means to learn by oneself; comparing and articulating methodologies, research fields and theoretical views of self-learning instead of opposing them in a 'Grail-like search' of the definitive definitions, methods and applications. If we want to see the seeds of educational renovation blossom against the backdrop of a self-learning paradigm, it is likely that the prime task of the research community will be to find ways of simultaneously consolidating the common theoretical core of self-learning, and articulating specific conceptualizations to this central, well-shared and firmly established body of research.

5.2 Perspectives for Practice in Self-Learning

It is likely that most educational and training institutions will continue to experiment with learning delivery systems that aim to foster self-learning practice. Due to the combination of budgetary pressures, ideological orientation and wishes of pedagogical innovation that characterize the present day in adult education, self-learning is bound to become a lively, albeit acutely polemical, theme for renovating existing training systems. Discussion among practitioners on the topic of self-learning is already vivid and controversial today, in particular because the self-learning notions and systems that have been put into practice have so far yielded little information on their efficiency. Resource centres, personalised learning workshops, learning networks, self-directed learning teams and individualised computer-assisted programmes have thus produced lots of enthusiasm and quite a few disillusions, but little empirical evidence of their observable results.

For self-learning to progress in practice, empirical evaluative research will have to be launched. Moreover, for self-learning to resist acute criticism from its opponents on practical grounds, several myths will have to be patiently but thoroughly destroyed. In the long run, we shall thus have to demonstrate, based on an observation of actual learning practice, that self-learning is not bound to be a solitary or individualistic activity, that it has very little to do with programmed instruction, that developing self-learning does not mean creating unemployment among trainers, that it is a more efficient and productive approach than other-directed learning, that self-learning is not necessarily computerised or dehumanised, and that it is more pleasant for the learner and more stimulating for the facilitator, etc.

5.3 Ethical Considerations

Closely related to the previous perspectives of practical development for self-learning are ethical concerns relative to possible deviations of self-learning notions as they have been forged and grown by early contributors. All the 'founding fathers' of the self-learning paradigm (Rogers, Knowles, Tough in North America, Dumazedier, Schwartz, Pineau in France) clearly positioned their views on self-learning within a humanistic/pragmatic framework, i.e. a global concept of human action as largely directed by man's conscious will to act within an environment that allows for a certain amount of freedom and self-detennination. In present times of heavy social and economic tension, there is a risk that these humanistic foundations of self-learning be played down and that, for strictly economic reasons, compulsory self-instruction programmes will soon replace the more self-determined, learner-centred, democratic innovations we observe today.

Conversely, an opposite trend might lead decision-makers in training and education to throw out the baby with the bathwater. Having noticed that some deviations of the self-learning philosophy lead to debatable practice (like compulsory self-training plans, modernised forms of programmed instruction, downsizing of the training force and massive implementation of multimedia equipement, etc.), education and training managers might quickly revert to a traditional, other-directed course of action and decide that self-learning was just one more of these pedagogical fads after all.

In spite of these risks, 'autoformation' is bound to prosper and expand in France as it does in most of the Western world (as concurrent contributions from other European countries in this book seem to show). Yet, for another few years, this growth will certainly be both rapid and somewhat hectic because of the flurry of debate - theoretical, practical and ethical - which self-learning concepts must increasingly trigger.

Some of us contend that the notion of self-learning has helped us discover the genuine, specific meaning of adult education. Well before self-learning attains the state of maturity it deserves as the 'most adult paradigm of education', it will have to go through some more time of adolescent growth, passion and self-doubt.

References

Carré, P. (1992). L'autoformation dans la formation professionnelle. Paris: La Documentation Française.

Carré, P. (1993). Self-Directed Learning in French professional education. In H. Long. & Associates (eds.), New ideas about Self-Directed Learning. Oklahoma: University Press, 139-148.

Carré, P. (1995). L'autodirection en formation. Education Permanente, 122, 221-232.

Carré, P., Mlékuz, G. & Poisson, D. et al. (1996). Pratiques d'autoformation et d'aide à l'autoformation. Les Cahiers d'Etudes du CUEEP, 32.

Conseil de l'Europe (1975). Réflexions sur l'autogestion de l'éducation des adultes. Strasbourg Conseil de l'Europe.

Dumazedier, J. (1973). L'éducation permanente et l'autoformation par le livre. Education Permanente, 20, 17-52.

Dumazedier, J. (1978). La société éducative et ses incertitudes. Education Permanente, 44, 3-14.

Dumazedier, J. et al. (1985). L'autoformation. Education Permanente, 78-79.

Galvani, P. (1991). Autoformation et fonction de formateur. Lyon: Chronique Sociale.

Héber-Suffrin, C. (1993). Le cercle des savoirs reconnus. Paris: Epi.

Long, H. & Associates (1991). Self-Directed Learning: consensus and conflict. Oklahoma: University Press.

Marion, S. (1993). L'école de la vie, ou la France autodidacte. Paris: JC Lattès.

le Meur, G. (1993). Quelle autoformation par l'autodidaxie? Revue Française de Pédagogie, 102, 35-43.

Moisan, A. (1993). Pratiques d'autoformation en entreprise. Revue Française de Pédagogie, 102, 23-34.

Nyhan, B. (1991). Developing people's ability to learn. Brussels: European Interuniversity Press.

Pineau, G. (1978). Les possibles de l'autoformation. Education Permanente, 44, 15-30.

Pineau, G. & Marie-Michèle (1983). Produire sa vie : autoformation et autobiographie. Paris: Edilig.

Pineau, G. (1992). L'autoformation: paradigme des économies socio-éducatives postmodernes? Etudes et expérimentations en formation continue, 13, 14-16.

Pineau, G. et al. (1995). L'autoformation en chantiers. Education Permanente, 122.

Poliak, C. F. (1992). La vocation d'autodidacte. Paris: L'Harmattan.

Portelli, P. (1993). L'autoformation en milieu associatif. Revue Française de Pédagogie, 102, 45-54.

Richardot, B. (1995). Bibliographie signalétique d'ouvrages et articles de langue française sur l'autoformation. Lille: CUEEP.

Schwartz, B. (1973). L'éducation demain. Paris: Aubier-Montaigne.

Sorel, M. et al. (1987). Apprendre peut-il s'apprendre? Education Permanente, 88-89.

46

Brigitte Denis

Self-Learning Activities in the French Community of Belgium

1 Introduction[3]

1.1 New Challenges Facing Learning

Reports of the Organization for Economic Cooperation Development (OECD)for the last thirty years emphasized the growing importance of education and training. New objectives and new roles for both learners and trainers have emerged. Transmission of knowledge is no longer considered the most efficient way to train people. Self-learning is now considered a necessary innovation that implies cultural, social, organisational and technological levels of organisations and companies (Fragniere, 1991). It represents a challenge for everyone. In a society which is experiencing deep social, economic and technological changes, flexibility and the capacity to continually retrain are necessary abilities for adaptation. Therefore training is on everyone's agenda. It ought to be possible everywhere (especially at the place of work). It should be available 'just in time', (the ideal being 'zero stock', ie. items of learning that can be used at once). These three features constitute what Denis and Leclercq (1995) have called 'a triple explosion of learning needs'. Nevertheless this doesn't suppress the necessity to develop competences of different levels during initial training. Leclercq (1987) stresses that effectiveness in learning depends not only on the mastery of specific competences (cognitive prerequisites), but also on a series of demultiplicative, strategic and dynamic competences.

---

[3] This contribution on self-directed learning is restricted to practices observed in the French Community of Belgium, including examples from the Brussels region. Practices of the Flemish and German communities of Belgium will not be discussed here.

Implementing self-learning is by no means a spontaneous generation process. Self-learning is conceptually rooted in theories such as constructivism (Piaget) and active pedagogy (Dewey, Freinet, etc.). Furthermore, the didactic tools and the infrastructure require special attention. Actually, self-learning can rely on distance learning or be organized in centres. It can use sophisticated hardware and softwares (eg. telematics), or traditional material (eg. mail conveyed handbooks).

1.2 History of Self-Directed Learning in Belgium

1.2.1 Le Service de l'Enseignement à Distance

In the Belgian French Community, self-learning is not a new phenomenon. As early as 1959, a special department of the Ministry of Education, le Service de l'Enseignement à Distance (SED) was created to develop distance and self-learning. Up to now, the interactions between trainers and learners of SED have been managed by mail, but occasional meetings were also held to organise discussion groups between learners as well as between learners and teachers. The following table indicates the number of 'new' learners registred at SED during the last seven years (except 1994).

1989	1990	1991	1992	1993	1995
22 964	22 231	23 097	22 210	15 823	13 574

Apparently this number decreased in 1993, due to the fact that it was decided that this service would no longer be free of charge and that the learners themselves would have to pay their enrolment (1500 bfr/year) for the courses. In 1993, there was a total of 41 022 inscriptions.

1.2.2 Other Initiatives

In Belgium as in other countries, some people are very much 'auto-didacts': they learn by themselves at home, try to obtain the necessary information, have their own strategies, their own methods and their own pace at which to learn. Some of them do it for the fun of it, others to prepare for examinations without attending courses at school. They take exams organised by a central jury.

Some workers are also (self) learners. They try to upgrade their knowledge and abilities in order to keep their job or to be promoted. Sometimes the companies provide internally developed didactical resources as well as periods of time in which to learn; sometimes they ask a training centre to organise the specially adapted courses.

Among the companies that have self-learning activities, new small/medium-sized enterprises often implemented self-learning from the start, i.e., when they were created. The majority of large enterprises (having more than one hundred workers) have now been involved in self-learning for a number of years. Small/medium-sized enterprises believe they cannot survive if they do not take care of the workers' flexibility. Now, companies no longer 'discourse' on self-learning but develop real activities!

The issue of self-learning has now attracted a great deal of interest and more and more people feel drawn by it. In this chapter, we will try to describe deversified implementation of self-learning activities in the Belgian French Community based on a recent survey.

2 A Survey on Self-Learning Experiments[4]

2.1 Objectives and Method

A questionnaire was sent to different organisations, which had, as far as we were aware, some experience of self-learning. The aim of this questionnaire was to gain from people pieces of information related to self-learning activities ranging from their definition of self-learning activities, the number of learners involved, the fields covered, the structures and the didactic resources available to the procedures of evaluation that are implemented.

---

[4] Thanks to Annick Lempereur and Valérie Massart who contributed to this survey.

This survey was completed by some oral interviews. It is of use to illustrate the range of meanings given to self-learning activities, research and actual activities in our coutry as well as some recommendations.

Firstly, we contacted by phone the majority of those companies which had participated in the 'Third Technological Week' organised by the 'Région Wallonne' in March 1995. If they then declared having had experience in self-learning or considered engaging in it, we forwarded them the questionnaire. Those companies were generally small/medium-sized enterprises. We also contacted some departments of the universities of the French Community (including Brussels) as well as centres that are well known because of their learning and training activities, for example, those that have had relationships with the European EUROTECNET Programme.

After this first selection, 104 questionnaires were sent, from which 49 were returned to us. Of these, eight organisations declared they were in the end not concerned with self-learning, whereas they had initially said otherwise. So finally we analysed 41 questionnaires, some of which not being filled completely. The information collected cannot be seen to represent all types of implementation of self-learning in the French-speaking part of Belgium. Nevertheless, the variety which appeared is an attempt to picture the landscape of self-learning experiments in our country.

2.2 Meanings of Self-Learning

2.2.1 Six Teaching/Learning Paradigms and Self-Learning

In their presentation of six teaching/learning paradigms, Denis and Leclercq (1995) have coined the expression 'mathetical ambivalence'[5], i.e., learning ambivalence. That means that sometimes the learner needs information and asks the trainer to provide him/her with information, models or exercises and that, on other occasions, he/she wants to explore for him/herself the available information or to experiment with his/her own hypotheses or to develop a personal project. The trainer's role, or the role of the didactical resources, is then to develop a 'didactical polyvalence' to adapt to learners' needs.

---

[5] Mathetic comes from the ancient greek verb μανθανω which means "to learn".

In self-learning contexts, we try to develop the paradigms that imply that the learner takes the initiative: exploration, experimentation and creation. Then, interaction between learners and trainers or didactical materials should be focused on problem-solving situations and acquisition of 'transversal' abilities. We shall see hereafter if the definitions and the objectives of self-learning are more or less focused on these concerns.

2.2.2 Definition(s)

Is it still necessary to define self-learning? It appears that this concept is not quite new, therefore its meaning ought to be well defined and adopted by many countries. But in reality, since self-learning is linked to a large number of national, cultural and linguistic perspectives, it is difficult to agree on a common definition in Europe even though some work has been done in this area (Nyhan, 1991; Carré & Pearn, 1992).

Below is a list of some of the definitions of self-learning we recieved from people in the French Community of Belgium:

- "To learn or to deepen a topic without obligation to do so. To develop your competences with the help of external services."
- "A perpetual revision of your own knowledge."
- "To permanently evaluate your learning needs and regularly use varied media to satisfy them."
- "After defining an objective, learning by yourself in new domains, but with the help of defined programmes and methodology."
- "To train by yourself with the help of manuals, conferences, etc., to be informed and to progress in your profession."
- "Having the will to maintain at the top of a technique, of a science, of an art, to answer a need in an appropriate way."
- "A non-organised environment by the management training which is taken to answer a personal need, an interest."
- "The way to be trained using didactical tools available to a person."

- "A learning medium offering to each person the possibility to develop, acquire a certain amount of knowledge when he/she needs it, where and when he/she wants."
- "An individual training system with the permanent accompaniment of a trainer to provide continuous training, remedial work, ..."
- "The propagation of knowledge attached to the enterprise's local and specific needs."
- "Different from self-teaching. Rather the creation and the animation of an environment which favour the awareness of learning needs and the development of anwers to them, a learner's initiative basis."
- "To be able to search for the necessary information, to learn at the right place and to discard unnecessary information."
- "The action of a person who learns by him/herself with the help of (or without) structures of training and with (or without) a trainer who becomes a learning facilitator."
- "The effective management of the regulation process of learning (needs analysis, definition of objectives, planning, execution, observation and measurement) by the learner. The trainer has to cope with the learner's mathetic ambivalence by didactic polyvalence."

Even if certain common points (eg. personal learning, freedom, autodidaxy) are often mentioned. It is difficult to extract from this a common definition acceptable for everybody. The study of how the institutions characterise self-learning could help us to clarify its meaning.

2.2.3 Characteristics of Self-Learning

The institutions which answered the questionnaire are placed according to different factors which characterize a self-learning environment. Some of them have been borrowed from Carré's 'seven pillars of self-learning' (1992). These elements can be grouped as follows:

- the socialization level of self-learning (cooperation and bringing together)
- the objectives of self-learning (transversal competences, definition of objectives)

- the methodology of self-learning (personal project, production of knowledge, resourceful person, facilitator, evaluation)
- the organisation of self-learning (timetable, permanent apprenticeship, everywhere)
- the resources of self-learning (resource centre, production of tools).

From the answers of 33 institutions, it can be noted that:

accent is first put on a methodology that emphasizes the personal project of learners (25), the evaluation (24) and the presence of a resourceful person (18), the term 'facilitator' (2), production of knowledge (13). The second important characteristics concern the organisation: we point out that an apprenticeship which is permanent (31) and everywhere (17), timetable is mentioned by 8 organisms. Then follow those aspects linked to socialization: cooperation and bringing together are mentioned 23 and 21 times respectively. The definition of objectives or transversal competences appears 22 and 15 times. The resources often mentioned are centres (17), but rarely the production of tools (4).

All companies characterize self-learning as permanent and stress the definition of objectives. Big enterprises place the accent on methodology aspects - strategy and personal initiative of learning - and on evaluation (personal project, evaluation, cooperation and definition of objectives). Self-learning characteristics for small/medium-sized enterprises are more focused on social aspects (cooperation, bringing together, definition of objectives and 'everywhere').

2.2.4 Definition of a 'Good Self-Learner'

Leclercq and Denis (1995 b) define the good self learner as a person able to self 'regulate' each phase of his/her learning process.

The Regulation Process

Leclercq and Denis (1995 b) give six phases of any process regulated (Leclercq, 1995) :

Phase 1: Needs analysis (problem identification)

Phase 2: Definition of the general objectives (project)

Phase 3: Operationalization (planning)

Phase 4: Execution (action)

Phase 5: Observation (measure)

Phase 6: Decisions of regulations (feedback loops)

How a learner may go through the different steps of the regulation process by him/herself will be illustrated for the 'Liège FOREM Technothèque' (Denis, 1993).

The Self-Learning Environment of the 'Technothèque'

The learners who come to this centre are generally aware of some learning needs but cannot specify them precisely (Phase 1). For example, they wish to use a computer but, because they do not know which kind of software to learn, their needs have to be precise: is it just to have a 'computing culture' or to try to get a job as a secretary or to specialise on a kind of hardware, ... ? It is the same for the planning of activities (Phase 2): how much time is the learner prepared to spend on the learning tasks, during which period of time, ... ? When the project is specified, operational objectives (Phase 3) can be adapted. All those questions are dealt with by the trainer and the learner. During the 'execution' (Phase 4), the self learner uses didactical resources, sometimes interacts with other learners and with the facilitator.

Observation and measure (Phase 5) of what happens during or just after the execution phase are not systematic. This may focus on the process or the products. Even if evaluation grids of a learning process based on constructivist principles exist, their use is not frequent (Denis, 1990). Evaluation often focuses on contents or application of procedures. There is no systematic evaluation of them because the goal of this centre is not certification but the promotion of self-learning.

What Actually Occurs ?

All of these six phases of the (self) regulated process of learning are far from being managed by the learner only. In actual fact, answers for 38 respondence are as follows: The needs are rarely defined by the learner only (7/38), but rather by the trainer and the learner (25/38) in a collaborative way. The objectives are defined either only by the learner (11/38) or by the trainer (11/38) or in co-operation (16/38) and the methods are generally chosen by the trainers (16/38) or in co-operation with the learner (17/38).

In small/medium-sized enterprises, a greater importance is placed on the learners than in large enterprises and self-training centres. The main motivation of small/medium-sized enterprises is to be flexible in order to be competitive. Large enterprises frequently mention their motivation to encourage self-learning. Perhaps this motivation is supported by the fact that they assume self-learning contributes to their productivity.

2.3 Research and Practice

Are the organisations interviewed involved in (or contributing to) research? Seven declared "yes". However, the kind of research differs.

2.3.1 At University Level

Practicing self-learning at a university does not automatically mean that research is done on this topic. Sometimes self-learning is just on opportunity to provide organisational facilities and individualised learning for the students. For example, teachers provide syllabi, videos or programmed instruction to the students so that distance and self-learning is possible. But systematic research about the impact and the modalities of such a learning organisation does not yet exist, even if effective tools with which to evaluate the return on investment of a training situation exist (Peters, 1994).

Studies of Learning Strategies

The 'Centre d'Auto-Formation et d'Evaluation Interactive Multimédia' (CAFEIM) at the Faculty of Psychology and Education of the University of Liège provides a self-learning environment for the students. They may use computers to construct their reports (eg. wordprocessors and spread sheets are available) or to be evaluated on a topic. CAFEIM also provides multimedia software and audio-visual materials (tapes and books) for self-learning of foreign languages (Leclercq & Gilles, 1996). Some recent students' research theses directed by professional researchers have dealt with learners' strategies when using multimedia tools; more specifically, they investigated the effect of objectives on strategies (Leclercq & Pierret, 1989), note-taking behavior in a hypermedia and its further use when testing occurs (Leclercq & Boskin, 1990), the short term effect of simulated exploration of a documentation centre (Gentile, 1993), the link between utility to learn, learning strategies in hypermedia and outcomes

(Gerard, 1994; Lardenoye, 1994), and the use of navigation tools in hypermedia (Reggers, 1995).

Computer-Assisted Evaluation

New evaluation techniques that contribute to formative and self evaluation. The Ministry of Higher Education and several Faculties of the University of Liège, Louvain-la-Neuve and Brussels are involved in such researches and practices (Gathy & Denef, 1993; Gilles, 1995; Plunus, 1996; Wilmet, 1995). A majority of these applications, including the study of self-estimation processes, have been studied over a long period of time by the 'Service de Technologie de l'Education' of University of Liège and among the world (Leclercq & Bruno, 1993).

A Conceptual Framework of Evaluation of the Results of Training

From 1990, a new conceptual framework of evaluation of the results of training has been experimented with by partners from Liège, Sheffield, Rome, Barcelona, Munich, Sevilla, Den Bos etc.. It aims to measure learners' self estimation and realism with the support of different computerized evaluation tools (Boxus et al., 1990). Those tools and practices have been developed and implemented in several training contexts (small/medium-sized enterprises, high schools, universities, etc) with positive results. The researchers observed that the learners were, on the one hand, able to self estimate and to increase their realism about the mastery of knowledge and, on the other hand, to develop their 'cognitive vigilance'. Actually, this methodology and the softwares are disseminated and used in secondary schools (Bosmans et al., 1996) and in university courses (Jans, 1996).

DELTA and TELEMATICS

In the DELTA programme, self-learning environments have been implemented and tested and universities were often consultants or evaluators of those actions (De Jong & Sarti, 1994). Within the framework of the TELEMATICS programme, some workpackages from a current project called ELECTRA deal with individual and collective learning. This project is carried out in cooperation with the four Euregio universities of Aachen, Liège, Maastricht and Diepenbeek. In the workpackages such as TELEDU (Belgium), POLARIS (Netherlands) and CNC+ (Germany), the researchers study the learning styles, how the learners use and access information, how they solve problems, how they interact together, etc. They also intend to develop self-learning materials (eg. hypertexts, reference guides, etc) as well as to use video-conference facilities.

2.3.2 At Enterprise Level

When enterprises declare they are involved in research, it means more specifically research and development of their training products. Research in self-learning is not considered the task of large companies or small/medium-sized enterprises even if they are interested in the results of such research. What they would like to know is whether self-learning or training have a positive impact on productivity. They feel that training is important but have no tools with which to evaluate its impact. Some companies hire consultant services to help them ameliorate or evaluate the efficiency of the learning environment.

Sometimes they become involved in research programmes, especially those supported by the Région Wallone or the European Union. Then they often work in cooperation with the departments of education of the universities, as is the case in the following examples:

A Belgian small and medium enterprise is developing the software MEDIA 9000 including ISO 9000 rules and based on the FORCE ROI (Return On Investment) already existing software.

- In the COMETT project Formation Autonome aux Moyens Multimédias Interactifs en Enterprises (FAMMIE), the universities of Liège and Barcelona developed in cooperation with Cockerill Sambre and Consultores Españoles a curriculum addressed to the producers of multimedia tools. Different multimedia softwares were designed to promote self-learning in the companies.
- PETRA projects also contributed to self-learning by, for example, studying the Adequation of Competences to Professional Profiles (ACPP). The ACPP method has been experimented with in different contexts: desktop publishing (Osterrieth et al, 1992) and training of museum guards (Peeters & Denis, 1993).
- EUROFORM projects provided experiments and tools for reflection on learning and training practices in professional contexts such as building construction and office computing (eg. Boxus, Leclercq & Freyens, 1994). This often helped to promote innovations in companies.
- The EUROTECNET network was esteemed because it offered contact between people working on self-learning, which resulted in exchanges on objec-

tives and methodology. A special meeting was organised in Liège (FOREM Technothèque) on the topic of self-learning in March 1994.

- Workers at a self-learning centre, the 'Technothèque', asked the University of Liège to help them analyse their self-learning practices and to modelise them (Denis, 1993).

It would be interesting to observe whether the changes induced by the participation in research are permanent and applicable to the whole company, especially in the large enterprises. There is a risk that the self-learning project be adopted by only a few people and therefore not be a part of the politics of the enterprise etc..

2.4 Implementing Self-Learning Activities

We tried to answer some questions related to the activities developed by the surveyed bodies or organisations implementing self-learning activities.

2.4.1 Why has the Institution Established Self-Learning?

Various factors have influenced the implementation of self-learning. Some institutions have been created in order to promote the training of people who are in search of work and of working people. These institutions clearly aim to develop the practices of self-learning (eg. the 'Technothèque à Liège', the 'Service d'Enseignement à Distance de la CF', the 'Centre de Technologies Avancées' in Mons, etc.). Other institutions have progressively established self-learning (eg. STE-formations in Liège, CASI-UO in Brussels, etc.).

A number of these institutions mentioned that the implementation of self-learning was necessary to react to the lack of training in the region and to extend what already did exist. They often assumed that this strategy is necessary in adults' training context. Some respondents mentioned that self-learning is an answer to the economical problem of individualised training: 'it would have been impossible, considering available financial resources, to proceed differently in order to individualize the training of foreign languages with more than 600 students'(CAFEIM-University of Liège).

Target Audiences

The target groups vary according to the objectives of the institutions. A training centre which cooperates with the trade union targets workers as do the small medium enterprises and large companies. Some target employees or 'independent' workers. The self-learning courses of the Ministy of Education of the French Community of Belgium are available to all groups. Other organisations such as 'STE-Formations' and 'COFIEN-CASI-UO' are only interested in targetting unemployed people (a large part of the training costs then being covered by the 'European Social Fund' which favours this group). At university, this only involves students. The 'Centre de Technologie Avancées' and the 'Technothèque' target unemployed people and workers, especially teachers at the 'Centre de Technologie Avancées'.

Fields of Self-Learning

A large number of fields are covered by the institutions concerning principally professional training but particularly new technologies (computing and bureautics). Self-learning domains in companies deal with management and specific techniques of the company, whereas self-learning of foreign languages in small/medium-sized enterprises hardly exists.

Organisation of a Self-Learning Environment

The *numbers of learners* in the different organisations vary. They depend in particular on the type of trainings (punctual or longdurational) chosen by the learner as well as on the company's size. In small/medium-sized enterprises, the number of learners is generally less than thirty.

Punctual trainings are organised in many centres (24/32). They deal, for example, with the legislation on unemployment, carreer management, curriculum vitae presentation (STE-Formations), telecommunications ('Technothèque'), word processing (COFIEN-CASI-UO), driving licences, technical products or processes, etc.. Punctual training is offered by all the training centres, by 10 small/medium-sized enterprises out of 16 and, by 10 large enterprises out of 12.

Average duration of the learners attendance varies from one organisation to another , and from between one and over thirteen days. In large companies and in small/medium-sized enterprises, the duration of self-learning varies from one to ten days per year. In two training centres, training lasts several months. This is due to the fact that it involves unemployed people who are trying to get further qualification.

Training is generally modular, i.e.composed of different modules. At the Ministry of Education, distance learning is partly modular (for the technical and scientific courses). At 'STE-Formations', it is not modular: parts of self-learning are organised for particular subjects additional to projects and courses.

Structures and Resources

The *types of learner management* vary from company to company. Learners are always supervised by at least one trainer in self-learning centres and this is also the case in enterprises. Four small/medium-sized enterprises practice self-learning without a trainer's support. Their self-learning activities rely on softwares, visits or on attendance at conferences.

Distance-learning is rare. Except in the Distance Learning Department of Education of the French Community where people always practice distance-learning, training generally takes place at a centre. Nevertheless, even in the Distance Learning Department, groupings of learners are planned each month. A tendency to develop distance learning has been observed in companies.

Important amounts of infrastructures, equipment and didactic resources are often dedicated to self-learning. Most of the institutions have buildings (18/34), computers (PC or Macintosch) devoted to self-learning (14/34), computer networks or softwares. Some have a library and viewing rooms, etc.

The most often cited (30/34) didactic resources used in self-learning are reference guides. Then follow conferences, then other resources such as educational software (20/34), visits (18), videos (12), CD ROM or CDI, self evaluation modules, mailed courses, exercise pools, videodiscs, etc.

The didactic resources vary according to the organisations :

In self-learning centres	In small/medium-sized enterprises	In large companies
- educational software - videos - linear programmed instruction - reference guides.	- reference guides - visits - conferences - programmed instruction[6]	- reference guides - conferences - educational software.

Exchange with other centres often exist between the organisations which answered our questionnaires. These contacts take place with other centres which practise self-learning. The interactions concern methodology and objectives and sometimes the sharing of resources etc..

Evaluation

As has already been mentioned, an evaluation seems to be a central concern for the heads of self-learning centres as well as for companies. However, it seems that it is almost impossible to evaluate self-learning systematically. More than one third of small/medium-sized enterprises never evaluate self-learning effects.

The main reasons why procedures of evaluation are developed or not may be summarized as follows:

Never: (27%), because the centres are access free and self-learning is not linked to formal certification.

Sometimes: (30%), the evaluation involves self-evaluation, a questionnaire, statistics of the results or records errors.

Often: (27%), evaluation softwares (GUESS, WINCHECK) are used, observation of the process is made.

---

[6] Most of small/medium-sized enterprises which answered the questionnaire interpreted this as training programmed in time schedule.

Always: (16%), use of tests, of certification and homework.

Large enterprises generally evaluate formally with tests, sampling, etc, and sometimes by looking at the practical results, whereas small/medium-sized enterprises essentially evaluate by mainly using the latter method.

3 Conclusions and Perspectives

Varying modalities of self-learning applying to various audiences and dealing with different topics are developed in the French-speaking part of Belgium. Usually the modalities of self-learning are linked to the needs and to the topics, e.g. if the learner needs to be trained in a particular field asked by the company or to carry out the accomplishment of a personal project.

The use of self-learning is a more recent phenomenon in large companies than in small/medium-sized enterprises's who have often applied it since their creation. Their goal is the workers' flexibility and polyvalence.

The definition of self-learning is not unanimous. This concept has to be clarified. Referring to some models such as 'the six teaching/learning paradigms' or the regulation process can help to situate the practice of self-learning or what should be a 'good self learner'. The different institutions interviewed generally accept the characteristics of self-learning mentioned by Carré & Pearn (1992).

The role of the trainer in the process of self-learning remains important: he/she intervenes generally in the definition of the needs, of the objectives and of the methodology of learning. Furthermore, he/she becomes a resource person, a facilitator of learning.

The centres do not often produce the didactic resources themselves. They make further use of already existing software or reference guides. However, some documents are produced by the trainers in order to answer to specific needs (e. g. programmed courses, self-evaluation modules).

Some efforts remain to be made in order to include evaluation (or self-evaluation) in the process of self-learning. Tools and methodologies exist, but it is still difficult to generalise them, namely because of a lack of information on them. Although self-learning proves to be an opportunity to implement a pedagogy based on personal projects, on the construction of knowledge by the learner himself and on formative evaluation, it should also devote attention to the evaluation issues.

Research exists in companies and at university level (but is rarely funded). More research on self-learning should be supported. The European programmes (i.e. from the EU) contribute greatly to developing self-learning strategies and tools, but this should be continued and focus on different aspects of self-learning and especially on its deep implementation (permanent changes in learning activities).

References

Bossuet, N. & Grangerard, C. (1990). Detaylorisation des formations et stratégie de flexibilité. Education Permanente, 104.

Boxus, E et al. (1990). Principes communs pour évaluer les résultats cognitifs d'une formation. Bruxelles: Eurotecnet.

Boxus, E. (1992). Check, une banque de questions interactive. In Weber & D[illegible]mont (eds.), Les Questionnaires Automatisables, colloque de l'ESIEE, Marne-la-Vallée.

Boxus, E., Leclercq, D. & Freyens (1994). Rapport d'activités du projet EUROFORM, EVALFORM. Service de Technologie de l'Education de l'Université de Liège.

Carré, P. & Pearn, M. (1992). L'auto-formation dans l'entreprise. Paris: Ententes.

Denis, B. (1993). Modélisation de l'approche d'auto-formation de la Technothèque. Service de Technologie de l'Education de l'Université de Liège.

Denis, B. (1990). Vers une auto-régulation des conduites d'animateur en milieu LOGO. Université de Liège: Thèse de doctorat.

Denis, B. & Jans, V. (1994). Evaluation et métacognition: l'avis des utilisateurs de CERT en formation professionnelle. Colloque 'QCM et Questionnaires Fermés". Marne La Vallée.

Denis, B. & Leclercq, D. (1995). Multimédias et apprentissages. In Noirhomme et Goffinet (eds.), Multimédia. Actes de la journée d'information sur le multimédia. Presses universitaires de Namur, 119-141.

Denis, B., Jans, V, Boxus, E, (1994). WINCHECK. Manuel d'utilisation, Service de Technologie de l'Education de l'Université de Liège.

Denis, B. et al. (1994). EUROFORM CERT: final report. Service de Technologie de l'Education de l'Université de Liège.

Denis, B. & Leclercq, D. (1995). Multimédias et apprentissages. In Noirhomme & Goffinet (eds.), Multimédia. Actes de la journée d'information sur le multimédia. Presses universitaires de Namur, 119-141.

Denis, B. & Leclercq, D. (1994). The fundamental I.D.'s and their associated problems. In J. Lowyck & J. Elen (eds.), Modelling I.D. Research. Proceedings of the first workshop of the special interest group on instructional design of EARLI. Leuven, June 17-19, 1994, 67-83.

Duchene, F. (1994). La distance pédagogique. Comment concevoir des cours scientifiques et techniques de qualité et servir des apprenants avec efficacité dans des situations de formation à distance ? Bruxelles: Communauté française de Belgique, Enseignement à distance.

Fragniere, G. (1991). La promotion de l'innovation en matière de formation, CONFERENCE EUROTECNET, Montpellier, 17-19 avril 1991.

Gentile, B. (1994). Mise au point d'un logiciel (et expérimentation) sur l'utilisation de l'U.D. de la Faculté de Psychologie et Sciences de l'Education, mémoire de licence.

Gerard, C. (1994). Le doigt sur la langue. Elaboration et expérimentation d'un logiciel interactif multimedia: epel, Mémoire de licence, ULG, Faculté de Philosophie et Lettres, 1993 - 1994.

Gilles, J.-L. (1995). Entraînement à l'auto-évaluation : une comparaison garçons/filles à l'Université, Communication au colloque de l'AIPU 'Enseignement supérieur: stratégies d'enseignement appropriées'. Université du Québec à Hull.

Jans, V. & Leclercq, D. (1996). Guidelines and new systems for testing students' academic competencies. Tempus workshop on assessment systems for Education. Utrecht: University.

Lardenoye, F. (1994). Expérimentation d'OLAFO, un hypermédia d'entraînement à l'espagnol, mémoire de licence, faculté de Philosophie et Lettres.

Leclercq, D. (1988). L'ordinateur et les défis d'apprentissages. Horizon, novembre 1987 et mars 1988.

Leclercq, D. (1994). Des banques de QCM-SGI (interactives ou non) au service de l'évaluation. Probio-Revue 17, 1-2. Louvain-la-Neuve, 19-28.

Leclercq, D. (1995). Conception d'interventions et construction de produits de formation. Service de Technologie de l'Education de l'Université de Liège.

Leclercq, D. & Pierret, D. (1989). A computerized open learning environment to study intrapersonal variations in learning styles: Delin. In Estes, Heene & Leclercq (eds.), Proceedings of the 7th International Conference on Technology and Education (ICTE). Orlando, Florida, 268-272.

Leclercq, D. and Boskin, A. (1990). Note taking behavior studied with the help of hypermedia. In Estes, Heene and Leclercq (eds.), Proceedings of the 7th International Conference on Technology and Education. Brussels: March, 2, 16-19.

Leclercq, D. et Bruno J. (1993). Item banking: Interactive testing and self-assessment. NATO ASI Series. Computer and science, Serie F, 112, Berlin.

Leclercq, D., Boxus E., de Brogniez, P., Wuidar, H., Lambert, F. (1993). The TASTE Approach: General Implicit Solutions in Multiple Choice Questions (MCQs). Open Books exams and Interactive Testing. In D. Leclercq & J. Bruno (eds.), Item banking: Interactive testing and self-assessment. NATO ASI Series. Berlin, 210-232.

Leclercq, D., Denis, B., Boxus, E., Gilles, J.L. (1994). Double Check: Un concept d'évaluation interactive permettant de distinguer les capacités de compréhension et d'analyse. Colloque Itinérant sur la Pédagogie Universitaire entre les Universités du Québec et de la Communauté française de Belgique. Liège, 25/10/94.

Leclercq, D. & Gilles, J-L, Guess (1994). Un logiciel pour s'entraîner à l'auto-estimation de sa compétence cognitive. Colloque 'QCM et Questionnaires Fermés'. Marne-La-Vallée, ESIEE, décembre 1994.

Leclercq, D., & Denis, B. (1995). Méthodes de formation et psychologie de l'apprentissage. Service de Technologie de l'Education de l'Université de Liège.

Leclercq, D. & Denis, B. (1995). Auto-formation et hypermédias: qu'est-ce qu'un bon autoapprenant? Deuxième Colloque européen sur l'auto-formation. Pratiques d'auto-formation et d'aide à l'auto-formation. Lille. 6-7 novembre 1995.

Nyhan, B. (1990). Promouvoir l'aptitude à l'auto-formation. Bruxelles: EUROTECNET.

Osterrieth et al (1992). Enquête sur la PAO: Projet CAMEE, CEE.

Papert, S. (1981). Jaillissement de l'esprit. Paris: Flammarion.

Peeters, R. (1993). Tutoring-Monitoring. Projet DELTA.

Peeters, R. (1994). Return on Investment. FORCE project.

Peeters, R. & Denis, B. (1993). Formation des gardiens de Musée à l'aide d'un hypermédia. STE-Université de Liège.

Plunus, G. (1996). Stratégies des apprenants lors d'un testing par 'Double Check'. Service de Technologie de l'Education de l'Université de Liège.

Reggers, T. (1995). La navigation dans les hypertextes et les hypermédias. Mémoire de licence en psychologie. ULG.

Scherer, N. (1993). Initiation au dessin assisté par ordinateur illustrée par AUTOCAD 12. Liège: Technothèque.

Soden, R. (1987). Developing the new professionality of teachers and trainers, report of a European Conference organised by 'The School of Further Education. Jordanhill College of Education'. In Collaboration with 'The University of Florence'. Glasgow, 8-9 April 1987.

STE-Formations. Multimédia. CDROM, 1994.

Steinbusch, M. (ed.) (1991). Development of qualification through self-regulated learning. Report of the EUROTECNET workshop on 'Self-regulated Learning'. Potsdam, 22-24 May 1991.

Wilmet, N. (1989). Le français et les sciences. Paris: Duculot.

XPLORATOR. périodique trimestriel du Centre de Technologies Avancées. Mons.

Marcel R. van der Klink & Wim J. Nijhof

Self-Directed Learning in the Netherlands

1 Introduction

Dutch companies are increasingly presenting the world market with a distinctive image of themselves by emphasizing a balance between quality, tailor-made goods, delivery time and, of course, the price of high quality products. What is characteristic of the manufacture of high quality products is the fact that knowledge is an essential production factor, not only for the manufacturing process itself, but also for constant innovation in products, in order to gain the edge on the competition. In the Netherlands, there is a growing concern among politicians, employers and trades unions that the strength of the economy is closely linked to the development and dissemination of knowledge. As an illustration of the importance that is attached to knowledge, we can point to the broad public debate on knowledge: companies, institutions and ordinary citizens are being invited by the government to reflect on what skills will be necessary to the Dutch economy in the twenty-first century.

The emphasis on knowledge as the crucial production factor will, of course, place great demands on the competence of employees both now and in the future (Nonaka, 1991). Employees are increasingly becoming 'knowledge workers' (Kessels, 1995) who possess the core competences necessary for the key processes in a company. Employees not only perform the important and complex tasks, but should be able to generate new knowledge. As a result, the generation of new knowledge becomes not only an activity performed by specific parts of the organization (e.g. research & development (R&D) departments), but a mode of behaviour for larger groups of employees. The trend outlined above towards a learning society is not specific to the Netherlands. This transformation is taking place all over the globe, albeit at varying rates, with new tensions and targets for different parts of the world (European Commission, 1996; Nijhof, 1996).

2 The Meaning of Self-Directed Learning in the Netherlands

Against this background it is interesting to study the concept of self-directed learning more closely. Although we make no claim to be exhaustive, we should like to point briefly here to several developments that can be linked directly or indirectly to the current focus on self-directed learning. The developments that we consider relevant are partly based on data from a trend study that was carried out recently among Dutch human resource development professionals (Streumer, Van der Klink & VandenBrink, 1996). Improving the flexibility of manufacturing, inspired for the most part by concepts such as 'Business Process Reengineering', 'Lean Production' and 'High Performance Workplaces', has resulted in stimulating empowerment of employees who are part of the operational core. This emphasis on more autonomy and responsibility has implications for training activities: employees are expected to learn, to learn and to learn, to analyse their own training needs for their current jobs and careers. At the same time, it will become less usual for employees to take part in formal classroom training activities. It is, after all, hardly effective to stress employees' dependence during training, whilst expecting a great degree of autonomy from those same employees in their day-to-day work (Romizowski, 1995). Examples of active forms of training include the use of on-the-job training, simulations, outdoor training and self-study (e.g. by correspondence course).

Besides changes in the division of responsibility and in the design of training, a shift can also be observed in the type of competences for which human resource development-activities are being deployed. The emphasis on continuous innovation within organizations requires human resource development to consider the problem of how to cope with teaching, expanding and maintaining those skills that will enable employees to select and to generate new knowledge. Topics for human resource development that are gaining importance are: learning how to learn, creative thinking, transferability, the promotion of a positive attitude towards learning, team work, and change.

The necessity to acquire new knowledge and skills close to the workplace and to be able to employ these appropriately and flexibly, stimulates the application of just-in-time, just-in-place performance support. Performance support is both an addition to, and a possible replacement for, formal training activities and has a potential favourable cost-benefit ratio. Some examples of these are the use of electronic performance support systems (EPSS), (electronic) job aids and information technology applications.

These developments point in different ways to the increasing importance of self-directed learning. Self-directed learning is a concept that fits in with the pursuit of more active forms of learning; it links up with attempts to replace or substitute training by the use of performance support, and the concept holds out the promise, whether justified or not, of equipping employees with the proliferation of knowledge.

Before portraying the state of the art of self-directed learning in The Netherlands, we consider it useful to define clearly what is understood by this term. In our opinion, the concept of self-directed learning can be set at three levels: individual, curricular and organizational.

The origin of the concept can be found in literature on American adult education. self-directed learning became popular through the work of scholars like Knowles (1978) and Brookfield (1986). Self-directed learning was seen as a promising concept that offered opportunities to incorporate goals such as self-development, consciousness-raising and emancipation into educational programmes. In the current literature, self-directed learning is not regarded exclusively as a feature of training (Percival, 1996; Vann, 1996).

The following meanings of self-directed learning can be found in the current literature:

- Self-directed learning as a characteristic of individuals. Self-directed learning can be regarded as the capacity of individuals to learn independently. Tough (1979), who carried out pioneering work in this area, demonstrated that, without the involvement of teachers, adults are able to define learning projects themselves and to select independently the resources (books, experts, etc) that enable them to realize these educational goals. Self-directed learning possesses both a cognitive and an affective dimension and, just like other (cognitive) learning strategies, it can be developed by specific training. Towards this end, it is necessary to determine accurately the ability to learn in a self-directed way. The best-known measuring instrument for this pupose is that of Guglielmino & Guglielmino (1991).
- Self-directed learning as a feature of curricula or training. Under this heading self-directed learning refers to the flexibility of a curriculum to meet the individual needs of participants in terms of goals, contents, instruction-strategy, duration and place. In the context of human resource development there is,

however, no flexibility from the point of view of the learner, but there is from the organization's standpoint. Goals and contents are mainly determined by the labour organization and flexibility is limited to variety in instruction strategy and the duration and place of training. A survey of Dutch companies revealed that flexibility is mainly limited to tempo and study time. (Cox, Schlusmans & Van Dinther 1993). This restriction on flexibility is appropriately designated 'controlled learner control' by Percival (1996).

- Self-directed learning as a characteristic of organizations. In current literature on informal learning and the learning organization, it is assumed that the characteristics of the labour organizational setting play a distinctive role in determining whether individual and collective learning processes occur (Senge, 1990; Watkins & Marsick, 1993). In this connection, the study by Baitsch & Frei (1980) is of great significance. These authors recorded the opportunities for learning inherent in the labour (environment), and considered the following to be the most important factors which determined learning opportunities: varied work with planning, controlling and operational tasks, opportunities to regulate the tempo and the order in which tasks are carried out, as well as communication and consultation with colleagues and management.

These three meanings are by no means mutually exclusive. They should be regarded as separate theoretical approaches that may well complement each other. By way of illustration, we would refer to Grow (1991), who indicated the importance of harmonizing the curriculum (especially instruction-strategy) with the ability of students to learn in a self-directed way. He elaborated this idea into a four-stage model, the 'Staged Self-Directed Learning Model', in which teacher control is gradually replaced by learner control. Obviously, curriculum flexibility is strongly connected with the trainee's capability for self-directed learning.

3 Self-Directed Learning in Theory and Practice

In our description of the state of the art of self-directed learning in the Netherlands, we used the above division of self-directed learning into individual capability, training feature and organizational characteristic. In view of the limited space, we have to make a selection from the available source out of the research domain.

3.1 Self-Directed Learning as a Characteristic of the Learner

In this paragraph we present the results of recent studies that examined the capacities for studying in a self-directed way and the appreciation given to it. Vermunt (1992) found that among undergraduates four different styles of learning occur: the meaning-oriented, the reproduction-oriented, the application-oriented and the directionless style of learning. Of these four, the meaning-oriented style of learning seems to be the most appropriate for self-directed learning, certainly when it comes to constructing new knowledge. Students with a meaning-oriented style of learning shape their own learning. They learn out of personal interest and undertake learning and thinking activities aimed at acquiring a deeper understanding of the subject matter and they connect new knowledge to their personal experiences and to already existing knowledge. One might expect students from the Open University in particular to possess this style of learning, but that does not prove to be the case. They are more inclined to be diploma-oriented and to undertake mainly reproductive learning activities, such as memorizing. Again, one might expect that the meaning-oriented style of learning would be a good predictor of study success. Vermunt's research confirmed this expectation. Recent research among first-year university students from three disciplines did not provide any empirical support for this (Schouwenburg, 1996).

Gielen (1995) determined the effectiveness of a COO-package concerning the legal aspects of counter work for the employees of a Dutch bank. In her research she used parts of Vermunt's (1992) learning styles instrument. Gielen found that learning out of personal interest, a part of the meaning-oriented style of learning, was much less favoured among the trainees than learning with a view to a (future) job, or learning aimed at obtaining a diploma. Learning out of personal interest proved not to correlate with study success. What was interesting, however, was that learning out of personal interest correlated much more closely with the feedback and support trainees received from their manager, both during and after training. A likely explanation for this might be that trainees who learn out of personal interest look much more actively for, or are much more receptive to, signals from their environment related to the areas in which they wish to acquire expertise. These employees are, after all, far more geared to actively integrating new knowledge into the knowledge they already possess.

Research into learning preferences shows that appreciation of curricula with a great degree of self-direction is more inclined to be negative than positive. Van den Berg (1992) studied the learning preferences of participants in an experimental secondary school for adults, which was designed according to the principles of open learning. Appreciation of such aspects as learning with the aid of COO instead of a teacher, deciding for oneself when tests should be carried out, and studying at home instead of at school, was extremely low. Participants indicated a preference for being trained according to the traditional method, where the teacher provides whole-class instruction, the programme is entirely fixed and the teacher brings the most important points of interest in the subject matter to the participants' attention. Van der Klink (1996) surveyed the characteristics of counter employees at post offices, with the aim of setting up an on-the-job training for these employees. In their day-to-day work, the employees carried out reasonably well cognitive activities that indicate an active and constructive manner of acquiring new information. This is not altogether surprising, since counter employees often work alone. Written information is the only available source about product changes. On the other hand, these employees particularly appreciated forms of training where a high degree of curriculum control was exercised (training courses in training centres, on-the-job training, supervised by a trainer). Forms of training with a high degree of learner control, such as COO and self-study by correspondence course were appreciated either only moderately or poorly. The paradox is, although the employees possess the prerequisite cognitive abilities for self-directed learning, they still prefer highly pre-structured training situations.

Appreciation of a non-traditional learning environment (open learning, self-study, on-the-job training), where participants themselves have to exercise more self control of the learning process, is relatively low. Earlier experiences with education may perhaps play a role in the appreciation of (older) adults. In their eyes, learning is strongly connected with a school situation, where education is associated with whole-class, teacher-oriented learning. They have little experience with other forms of training, which explains the relatively low appreciation they have of, for example, open learning and self-study.

3.2 Self-Directed Learning as a Feature of the Curriculum

As was stated earlier, self-directed learning refers to the flexibility of curricula in terms of goals, contents, instruction-strategy as well as the duration and place of training. Within the field of human resource development, making curricula more flexible features high on the list of priorities, in order to increase the effectiveness and efficiency of training. In this paragraph we will try to summarize the most salient research results available.

According to De Bruijn (1993), making curricula more flexible is not always effective. She carried out various experiments with a software application for elementary arithmetic developed for adults with little formal education. De Bruijn varied among other things the extent to which the programme provided instructions when the additions were answered incorrectly. She discovered that trainees scarcely use the possibility of actively requesting assistance by means of the help-button. In De Bruijn's view, optional possibilities of support are, therefore, less suitable for those with a low level of education.

One method of making the curriculum more flexible that shows promising results is training with 'Leittexten'. The idea of 'Leittexte' originated in Germany (Koch, 1992). 'Leittexte' contain questions, instructions and graphic images which help employees, working individually and as independently as possible, to learn to carry out a task step-by-step and to reflect on their efforts. Active participation in the training process by the trainer is reduced to a minimum. The 'Leittext' is, in fact, a form of supervised self-study. Sample projects, grafted onto the idea of 'Leittexte', were carried out in practical training courses for adults with a low level of education (Van der Sanden, 1993). Teurlings (1993) studied the effectiveness of 'Leittexte' in an off-the-job training course in Word Perfect 5.1. The advantage of the 'Leittext' is that it integrates job-related knowledge into the systematic mastering of learning skills, such as planning, evaluation and reflection. The trainees in the 'Leittext' course were, therefore, better able to develop their skills with WP 5.1 independently on the job, compared with trainees in conventional whole-class training. The existence of a positive and stimulating learning climate on the job is, however, of vital importance here (according to Teurlings. 1993).

Lazonder (1994), in his research on the effectiveness of self-study packages for WP 5.1, found that the quality of the self-study material had an effect on the learning outcomes. Lazonder compared the usual manual with a minimal manual. Typical of the minimal manual is its focus on action (working on meaningful tasks); it contains little text and the sentences are short. Moreover, the chapters contain whole units of information and a great deal of attention is paid to finding and correcting mistakes. His research revealed that the minimal manual was a more effective method of training than the conventional, extremely comprehensive manual intended for self-study.

Making training more flexible may contribute to increased efficiency, due to the reduction in training costs. Evidence for this can be found in studies by Van Dellen & Oosterheert (1994) and Bastiaens, Nijhof & Abma (1995). Van Dellen & Oosterheert (1994) studied the effects of self-study, compared with whole-class instruction. The training in their study was a course in Windows for employees of the Inland Revenue. Those following self-study were more satisfied with the training, but scored lower in the test at the end of the course and in the transfer test three months later. The self-study variant was, however, considerably cheaper for the organization: by at least 24%. Bastiaens, Nijhof & Abma (1995) compared the effectiveness of an Electronic Performance Support System (EPSS) with a conventional whole-class instruction for insurance agents. The EPSS was installed in a portable laptop and consisted of a tool that automatically determined the amount of the premium and the pension or mortgage. The EPSS contains a training and advice tool, adjusted with exercises and instructions for learning how to operate the system. Selling pensions is rather complex, because it requires a great deal of computation, increasing the possibility of incorrect advice being given. It was expected that, by automating the computations, the insurance agents would be able to spend more time on interaction with the client and would feel more confident about the accuracy of their pension advice. This would, in turn, result in an increase in the turnover of pension policies. The study showed, however, that the insurance agents with an EPSS did not sell any more pensions than those who had been trained by the whole-class variant without EPSS. Moreover, the agents who had been trained with the EPSS missed the whole-class meetings, which provided them with the opportunity to maintain contact with insurance agents from other regions. This lack of contact weighed heavily on them. The EPSS did, however, result in a drastic reduction in training and turnover costs.

Making training more flexible features high on the priority list of organizations. The above studies, however, revealed that this does not always lead to better training results. The quality of the training material seems to play an important role in achieving success. The manner and the extent to which flexibility can be applied depends, among other things, on the ability to learn in a self-directed way and appreciation of this amongst the intended participants. Improving the flexibility of curricula does lead to a reduction in training costs, but it remains to be seen whether greater efficiency outweighs the disadvantages, in terms of reduced motivation, the lack of a social climate and cooperation and some disappointing learning outcomes, too.

3.3 Self-Directed Learning as a Characteristic of the Labour Organization

The past few years have seen a growing interest in practice in the extent to which the structure of the labour (organization) determines, draws on and utilizes employees' opportunities for learning and development. In the Netherlands, this issue is topical in the framework of legislation relating to labour conditions and the quality of labour. One unique feature of the Dutch situation is that employers are obliged by law or by contract to guarantee that positions have sufficient opportunities for learning and development - this obligation has a legal basis. It is not really surprising though that this subject is receiving attention in the Netherlands, at the legislative level too, as this country has a high percentage of people declared unfit for work. The government regards this as unacceptable, both socially (a waste of human capital), but, especially financially (pressure on the budget).

The opportunities for learning in the Netherlands are predominantly based on the socio-technical organizational design theory. This theory attempts to combine the idea of the humanizing of labour, which is chiefly developed in Germany, with the idea of making labour and organizations more flexible, the emphasis being on achieving functional flexibility. In a nutshell, the objective of this theory is the design of broad, all-round jobs, incorporating operational, controlling and planning tasks carried out by employees with a fair degree of autonomy (Koopman-Iwema, 1986). The emphasis on the wholeness (Hacker, 1978) and the complexity of tasks provides guarantees for the development and broadening of professional qualifications (Nijhof & Streumer, 1994). By building in teamwork and consultation into the jobs, social skills can be developed (Baitsch & Frei, 1980). Despite the legislation now in force, current practice reveals contradictory approaches to the organizational design, with varying implications for the opportunities for learning and development. Great differences can be observed in the design of jobs with regard to the existence of learning potential. These differences exist not only between, but also within branches of industry, and even between departments and jobs within companies.

By way of illustration, we wish to turn to several recent studies. Case-studies carried out in the retail trade show that the aim here is to achieve a far-reaching, classically Tayloristic division of labour, resulting in narrow jobs requiring only minimal company-oriented training and which offer little prospect of promotion (Van den Tillaart, 1993). Conversely, research in the food and tobacco industries shows a trend towards broader jobs, with a greater variety of tasks at different levels of complexity (Feijen, 1993). The study by Warmendam & Van den Berg (1992) established that the current level of competence determines the extent to which jobs can be implemented and made more flexible. They ascertained that in a number of companies employees were not able to reach the level of competence required in order to function properly in an all-round job, even after specific training. The result was, out of sheer necessity, narrower jobs. Kwakman (1992) carried out a study among 422 employees from seven different companies into the extent to which forms of informal learning were used on the job.

Particularly interesting here are her findings with regard to the characteristics of jobs and organizations relating to discovery learning (working independently on unfamiliar tasks and problems, without any assistance from colleagues or managers). This was used less in strongly hierarchical organized companies with a considerable division of labour. Discovery learning was found more frequently in executive jobs, in more autonomous jobs and in more complex jobs. Klarenberg, Van Moorsel & Poell (1996) defined the learning climate in two comparable production departments of one and the same metal company, using Bartram, Foster & Lindsey's (1993) Learning Climate Questionnaire. Learning climate is defined as the space and stimulus that employees are given in order to behave in a learning manner. The two departments differed in the quality of labour: in the one, the work was chiefly organized in a task-oriented manner, with the emphasis on incomplete and limited jobs with few responsibilities. In the other department, there was group labour: the employees took all decisions relating to the performance of tasks as a group. The researchers concluded that the employees who carried out group labour experienced more opportunities for learning in their work.

A totally different approach to (self-directed) learning from a labour-organizational perspective is provided by the performance approach. This is often called 'performance improvement' or 'performance support'. The performance approach is essentially an umbrella term, covering a great diversity of instruments and strategies, all aimed at optimizing the performance of tasks. A recent example of the use of electronic support in the Netherlands is the Further Education (BVE)-NETwork. This network, which is currently being set up, will offer a great number of resources (sample programmes, teaching programmes, and the like) to teachers working in educational institutes in vocational (adult) education. The teachers can use this network to exchange information with colleagues in all other educational institutes. This is clearly a voluntary form of support; teachers will themselves decide when and to what extent they wish to make use of it. The use of information technology may, however, also lead to a great degree of standardization, which may well have a negative impact. An example of this is the use of an electronic decision-making system in the Department of Social Services (Troost, 1996). This system, in which all client information is stored, determines the type and amount of benefit on the basis of the information entered. The transfer of decision-making powers to the system may lead the employees to regard this as an essential infringement of their professional status.

Research into the effectiveness of similar electronic systems is scarce. Bastiaens, Nijhof & Abma (1996) constructed and evaluated the use of an electronic information tool for employees in the telephone customer service department of a banking organization. The electronic tool was designed to improve accessibility to (product) information. By incorporating the tool in the employees' computer system, it is possible to reduce the usual length of training for new employees from one month to six days. In the new situation much more use was made of the information available.

Summarizing, we can state that it is widely recognized that the structure of jobs and organizations does have an impact on the existence and quality of opportunities for learning and development at the worksite. Nevertheless, there are indications that not all organizations allow the opportunities for learning and development within jobs to carry equal weight when it comes to actually creating jobs. Many of the studies discussed here, concentrate on the provision of opportunities for learning within the current labour situation. Scant attention is paid to such subjects as the utilization of the existing opportunities for learning, the quality of the learning processes and, as an extension of this, the quality of task performance. It is the input factors that receive particular attention, whereas within the performance approach the emphasis lies heavily on optimizing the output. In the performance approach, learning is mainly regarded as a necessary pre-condition for improving output. This marked bias within the performance approach towards immediate (economically measurable) output may lead to a situation where problems relating to opportunities for learning and development are not taken seriously, or only marginally, in the solution of the performance problem.

4 Reflection and Recommendations

It is our goal to inform the reader of the current state of affairs in the Netherlands in the field of self-directed learning. Looking back, we can establish that self-directed learning is, in fact, a multi-dimensional concept that can be set at three levels: individual, training and organizational. This multi-dimensionality, in combination with the numerous theoretical approaches deployed for studying the phenomenon, makes for a fragmented picture. Based on this observation, we should like to make some concluding remarks about aspects of self-directed learning that until now have not been worked out satisfactorily, either in the development of theories or in practice.

Firstly, too little is known about the quality of self-directed learning processes. Here we would make a distinction between the acquisition of existing knowledge and skills (reproductive learning) and the construction of new knowledge and skills (productive learning). Examples of virtually completely self-directed learning in work situations, without any form of support from training or organizational measures, indicate that, as a result, only a limited understanding has been gained of the routine aspects of working processes. Consequently, the appropriate handling of exceptional situations (for example, defects) runs into problems (cf., for example Scribner & Sachs, 1990). More research is needed into the possible negative impact this may have on the quality of learning processes and task performance. The emergence of the knowledge-worker raises the interesting question of how self-directed learning must be shaped, with a view to creating new knowledge and skills. Which (learning) skills are essential? Which job characteristics and which organizational environment has a stimulating effect? And, can (flexible) training schemes contribute to the creation of the right conditions for productive learning? In our opinion, developmental research can play an important role here.

Secondly, we wish to point out the negative impact of self-directed learning in work and training situations from the participants' point of view. There is a risk that the current emphasis on self-directed learning will increase inequality in opportunities for learning and training. It is reasonable to assume that not all groups are able to use and appreciate self-directed learning in equal measure: for example, adults with a low level of education who carry out routine, undemanding tasks. Besides this group, one should also think of older employees with work experience containing little variety. Recent research makes it clear that this group needs more structure and supervision in order to be able to participate successfully in training (Thijssen, 1996). The Netherlands is a multi-cultural society and not all cultures here value such qualities as independence, showing initiative and speaking one's mind in learning and work situations (Meeuwsen, 1995). In summing up, we may say that greater emphasis on self-directed learning within human resource development can only be successful when the current position of specific groups on the labour market is taken into account. If this is neglected, then only the highly-educated young knowledge workers will be able to exploit the benefits of self-directed learning.

Finally, we would like to point to the necessity for an integration of theoretical perspectives; the term 'learning environment' could serve as an integrating concept. We interprete learning environment as a situation in which participants are enabled to retain, acquire and/or generate new knowledge and skills. A situation in which the extent of training, organizational structure and support is variable and is determined by the specifications of the task and the learner characteristics of the participants. In our opinion, more attention should be paid to the interaction between the characteristics of the organization, the type of training and the participants (Baldwin & Ford, 1988). The reality in the field of human resource development is too complex to achieve a significant increase in knowledge about self-directed learning in the context of human resource development, based on just one theoretical viewpoint. Learning theory, organisation theory and information and communication technology might help to bring forward new solutions (Nijhof & Simons, 1995).

References

Baitsch, C. & F. Frei (1980). Qualifizierung in der Arbeitstätigkeit. Bern: Verlag Hans Huber.

Baldwin, T.T. & J. K. Ford (1988). Transfer of training: A review and directions for future research. Personnel Psychology. 41, 63-105.

Bartram, D., J. Foster, P.A. Lindley, A.J. Brown & S. Nixon (1993). The learning climate questionnaire. Employment Service and Newland Park Associates.

Bastiaens, T.J., W.J. Nijhof & H.J. Abma (1995). The effectiveness of an Electronic Performance Support System on learning and performance. Holton, E.F III (ed.). Academy of Human Resource Development 1995 conference proceedings, Austin, 1-13.

Bastiaens, T.J., W.J. Nijhof & H.J. Abma (1996). Electronic performance support for telephone operators. Holton, E.F III (ed.). Academy of Human Resource Development 1996 conference proceedings, Austin, 213-221.

Berg, E. van den (1992). Motivational profiles of adult learners in relation to Self-Directed Learning. Paper presented at the Annual Conference of the American Educational Research Association (AERA), San Francisco, 1992.

Brookfield, S. (1986). Understanding and facilitating adult learning: a comprehensive analysis of principes and effective practice. Open University Press.

Bruijn, H.F.M. de (1993). Situated cognition in a computerized learning environment for adult basic education students (dissertation). Enschede: Universiteit Twente.

Cox, F.W.M., K.H.L.A. Schlusmans, & E.R. van Dinther (1993). Bedrijven (nog) gesloten voor open leren. Magazine Opleidingen, 4, 24-25.

Dellen, Th. van & I.E. Oosterheert (1994). Differentiële (kosten)effectiviteit van twee instructievormen. Tijdschrift voor Onderwijswetenschappen, 24, 2/3, 101-111.

Gielen, E.W.M. (1995). Transfer of training in a corporate setting (dissertation). Enschede: Universiteit Twente.

Grow, G.O. (1991). Teaching learners to be self-directed. Adult Education Quarterly, 41, 3, 125-149.

Guglielmini, P.J. & Guglielmini, L.M. (1991). The learning preference assessment. USA: Organization Design and Development.

Feijen, C.J. (1993). Scholing van werkenden in de voedings- en genotsmiddelenindustrie. Paper voor de Onderwijsresearch Dagen in Maastricht. Nijmegen: Instituut voor Toegepaste Sociale Wetenschappen.

Hacker, W. (1978). Allgemeine Arbeits- und Ingenieurspsychologie. Bern: Verlag Hans Huber.

Kessels, J. (1995). Opleiden en leren in arbeidsorganisaties: het ambivalente perspectief van de kennis-produktiviteit. Comenius, 15, 2, 179-193.

Klarenberg, K., M. van Moorsel & R. Poell (1996). Leerklimaat op de werkplek: op zoek naar een meetinstrument. Opleiding & Ontwikkeling 9, 7/8, 22-27.

Klink, M.R. van der (1996). Structured on-the-job training: pre-design analysis activities. Holton, E.F III(ed.). Academy of Human Resource Development 1996 conference proceedings, Austin, 598-604.

Knowles, M. (1978). The adult learner: a neglected species. Houston: Gulf Publications.

Koch, J. (1992). Ansichten, Einsichten und Missverständnisse in der Ausbildung mit Leittexten. Berufsbildung in Wissenschaft und Praxis, 3, 29-32.

Koopman-Iwema, A.M. (1986). Automatiseren is reorganiseren. Richtlijnen voor personeelsmanagement. Deventer: Kluwer.

Kwakman, K. (1992). Intentioneel en informeel leren in arbeidsorganisaties. Nijmegen: Katholieke Universiteit Nijmegen.

Lazonder, A.W. (1994). Minimalist computer documentation. A study on constructive and corrective skills development (dissertation). Enschede: Universiteit Twente.

Meeuwsen, M.J. (1995). Cultuurdimensies; determinanten voor deelnemersgedrag in opleidingen. Handboek Effectief Opleiden, 14.4-1.01 - 14.4-1.19. Delwel: Den Haag.

Nijhof, W.J. & J.N. Streumer (1994). Verbreed Beroepsonderwijs. De Lier: Academisch Boeken Centrum.

Nijhof, W.J. & P.R.J. Simons (1995). Opleiden in arbeidsorganisaties. Pedagogische Studien, 1.

Nijhof, W.J. (1996).Towards the Learning Society. International Journal of Lifelong Learning in Europe, 1, 47-50.

Nonaka, I. (1991). The Knowledge Creating Company. Harvard Business Review, Nov/dec. 1991, 96-104.

Percival, A. (1996). Invited reaction: An adult educator responds. Human Resource Development Quarterly 7, 2, 131-139.

Romiszowski, A.J. (1995). Delivery systems for corporate training in the future. In: Mulder, M., W.J.Nijhof & R.O. Brinkerhoff (eds.). Corporate training for effective performance. Boston [etc.]: Kluwer Academic Publishers.

Sanden, J.M.M. van der (1993). Zelfstandig leren in de praktijk van het CBB. Amersfoort: SVE.

Schouwenburg, H.C. (1996). Een onderzoek naar leerstijlen. Tijdschrift voor Onderwijsresearch 21, 2, 151-161.

Scribner, S. & P. Sachs (1990). On-the-job training: a case study. New York: National Centre on Education and Employment.

Senge, P. (1990). The fifth discipline: the art and practice of the learning organization. London [etc.]:Century Business.

Streumer, J.N., M.R. van der Klink & K. van den Brink (1996). The future of HRD. Holton, E.F III (ed.). Academy of Human Resource Development 1996 conference proceedings, Austin, 130-138.

Teurlings, C. (1993). Leren tekstverwerken: een nieuw perspectief (dissertation). Tilburg: Katholieke Universiteit Brabant.

Tillaart, H. van den (1993). Scholing van werkenden in de detailhandel. Paper voor de Onderwijsresearch Dagen in Maastricht. Nijmegen: Instituut voor Toegepaste Sociale Wetenschappen.

Thijssen, J.G.L. (1996). Leren, leeftijd en loopbaanperspectief (dissertation). Deventer: Kluwer Bedrijfswetenschappen.

Tough (1979). The adult's learning projects. Toronto: Ontario Institute for Studies in Education.

Troost, P. (1996). Werken met casussen succesvol. Profiel 5, 4, 16-19.

Vann, B.A. (1996). Learning self-direction in a social and experiental context. Human Resource Development Quarterly 7, 2, 121-130.

Vermunt, J.D.H.M. (1992). Leerstijlen en sturen van leerprocessen in het hoger onderwijs. Naar procesgerichte instructie in zelfstandig denken (dissertation). Amsterdam [etc.]: Swets & Zeitlinger.

Warmendam, J. & J. van den Berg (1992). Scholing van werknemers in veranderende organisaties. Den Haag: Ministerie van Sociale Zaken en Werkgelegenheid.

Watkins, K.E. & V.J. Marsick (1993). Sculpting the learning organization: Lessons in the art and science of systematic change. San Francisco: Jossey-Bass.

Keith Percy

Self-Directed Learning among Adults in the United Kingdom

1 Introduction

In 1991, Candy noted that discussion of self-direction had become a 'major - perhaps the major - growth industry' in North American continuing education research and practice. It is evident that the same is not true for the United Kingdom, even if one acknowledges that Candy's observation covers a wide range of educational practices and contexts. If one attempts to disentangle the voluminous North American literature on independent, self-managed, self-directed learning etc., it becomes clear that it includes self-direction both as a desirable educational goal and as a methodology (or 'technology' - Knowles, 1970) of learning. It also encompasses self-direction among adults and younger students in college and university, full and part-time contexts as well as various manifestations of self-learning among adults in the community, adults not necessarily in touch with an educator or educational institution.

Probably some of the observable differences between North America and the United Kingdom relate to use of dissimilar terminology and concepts and marginal variations in the use of the same terminology or concepts. Certainly for the past fifteen years in the United Kingdom, theoretical discussions at the post-compulsory education level have been hegemonised by the twin 'umbrella' concepts of 'experiential learning' and 'open learning'. These concepts defy close definition; leading exponents make a virtue of their imprecise 'catch-all' nature and engage in public dialogue about, and re-definition of, their parameters (cf., on 'experiential learning', Boud, Keogh & Walker (1985); Weil & McGill (1989); and, on open learning, Thorpe (1988); Temple (1991); Rowntree (1992)). It is demonstrable that some of the debates which in North America have taken place as aspects of 'independent' or 'self-directed' learning have been successfully colonised in the United Kingdom by what Robbins (1988) calls the 'conceptual orgy in which thinking becomes fuddled' associated with experiential learning and open learning.

Sections two and three of this chapter avoid over-precise definition of the concepts under examination and trawl somewhat indiscriminately in the muddied waters of open, experiential and work-related learning in the United Kingdom in order to secure a few items of interest, and possibly some indicators of future development, for an international audience. Section four of the chapter turns more directly to work on self-directed learning and makes a sharp distinction between self direction in learning in the context of colleges and educational institutions, in which professional educators play a facilitatory, supporting and determining role, and self-direction independent of, or distant from, educational institutions and educators. It is research into the latter with which section four is concerned exclusively. Section five makes concluding remarks and formulates a few predictions.

2 Self-Directed, Open and Experiential Learning

If one does take a rather loose formulation of 'self direction' and 'independence' in learning, then it is possible to review trends in the United Kingdom in the broad fields of open, distance, flexible and experiential learning and to identify elements which are relevant. The relevance lies in the fact that although professional educators are centrally involved and often determine structure and context, emphasis is placed upon adult learner choice and control of one of the following: content, order, timing, pace, location, purpose and endpoint. A brief review might include the following:

- Most colleges and large adult education centres to which adults in the United Kingdom have access have, since the early 1980s, developed open learning centres or systems which are essentially banks of learning resources which may be used by learners flexibly to suit their own programmes and purposes. Normally tutors or facilitators are available to assist. Such learning resources have often been of variable quality but the advantages to the learner at the institution have been seen to be potentially considerable. The learner has had a much greater freedom to learn according to a convenient timetable; the institution has had a cost-effective way of reaching more students. Little work has, however, been done on the appropriateness of open learning to different personalities and learning styles to be found among learners (Thorpe, 1988; Knapper, 1988).

- Since 1970, the Open University has made available at a distance high class learning materials to hundreds of thousands of its own registered adult students and to other adults who choose to buy courses or smaller modules. Despite more recent experimentation, the majority of the materials are relatively fixed and non-interactive and have a long life-span. The freedom accorded to be self-directing does not normally extend to course content. The Open University has become a major influence upon institutions of post-compulsory education world-wide; in the United Kingdom - because of its national remit and its resources - it has become a major provider of distance management and professional education as well a leader in the field of recognition of professional experience and accreditation of workplace learning.

- In the past decade, particularly, a large proportion of other United Kingdom universities have gradually 'modularised' their undergraduate curricula, semesterised their annual timetables, and greatly increased the numbers of adult students, especially on part-time courses. Modularisation implies courses subdivided into self-contained smaller units which, to some extent, can be studied in flexible order. Elements of distance and open learning have been introduced into some modules. Project-work, individual dissertations and study contracts with agreed learning outcomes have replaced more conventional modes of assessment in some instances. In these ways adult degree students have enjoyed some self-direction in their studies, and this has enabled them to make adjustments according to personal and domestic circumstances.

- In the United Kingdom, one of the best known aspects of experiential learning is that of assessment of prior learning (APL). Since the early 1980s, with a range of institutional procedures and safeguards, it has become increasingly common for colleges to give credit to adults towards a degree or other qualification for 'prior experience'. Most commonly, this is formally recognisable prior educational experience: courses, programmes and classes followed successfully in another institution. Accreditation of prior experiential learning (APEL) is also possible in many institutions. The fundamental requirement for APEL is the presentation of evidence that identifiable skills, abilities or competencies have been acquired and it is not important whether they have been acquired at work, at home, in educational situations or in the community. Thus, in a real sense, an adult is given educational credit for self-directed activity which is subsequently validated as having learning outcomes. The process of validation is also dependent upon the adults self-direction; she/he must decide how to present the evidence and what claims to make. Practice of course, more complex than the deceptively attractive theory. Validation procedures can be overly bureaucratic and burdensome for the adult; a danger is that life experience can, in effect, be devalued (Evans, 1985).

3 Self-Directed Learning and the Workforce

In United Kingdom industry and commerce, management theory for the past five years or so has been emphasising the concepts of the 'learning organisation', the 'learning company', 'the learning workforce' etc. (Pedler, Burgoyne and Boydell, 1991; Pedler, 1994). In order to compete successfully and to adapt flexibly to changing commercial and social conditions, the learning company, it has been argued, should adopt management, communications and decision-making structures which maximise creativity, commitment and responsiveness in its workforce. Education and training - learning - for all employees is the key. Education and training - the new philosophy suggests - should not be required of the employee by the employer but organically be self-generating among the workforce. Employees of the future must be both highly motivated and self-directing in their work; the learning they undertake should share the same characteristics. There is a current vogue in the United Kingdom for employee development schemes in which large companies encourage and pay for their workforce to undertake learning (any learning, not necessarily but preferably job-related) in order to encourage flexibility and positive attitudes to future self-initiated learning (Gibbs & McCarthy, 1996; Forrester & Ward, 1993). There is also a trend towards arguing that continuing professional development (CPD) of managerial and professional staff in a fast-changing professional world of globalisation, new technology and redundant skills, should be controlled and directed by motivated professional employees themselves rather than by the employers with whom they may only spend a small proportion of their working lives (Geale, 1995).

With regard to the workforce generally in the United Kingdom, relatively little is known about its self-directed learning. In one respect this is surprising. There is a huge concern, shared publicly by government, employers and education and training providers, about the national economic performance and there is received wisdom that greater participation in training, education and learning would improve that performance. There have, indeed, been a number of major surveys investigating workforce participation in (normally) vocational education or training but - with respect to identifying self-directed learning - there have been problems which have been largely perceptual and methodological. There is an issue of whether investigators understand clearly the notion of self-direction in learning in the formulation of their enquiries, and there is a further issue of whether respondents perceive self-learning as validly coming within the scope of what they are being asked.

Three major surveys between 1989 and 1994 published variable (but for government all somewhat depressing) findings on the participation of the workforce (i.e. economically active adults) in vocational education and training. The 'Training in Britain' survey carried out in 1986-7 (Training Agency, 1989) showed that 33% of the workforce had received some vocational education or training in the three years prior to the survey. Using similar parameters, the 'Employment in Britain' survey (Policy Studies Institute, 1993) produced a figure of 54% participation. 'The Individual Commitment to Learning': 'Individuals' Attitudes Survey' (Employment Department, 1994) arrived at a participation figure of 48%. It is clear that some of the variation relates to the precise form of words used to describe participation in learning. For example, the Employment Department 1994 survey used a two-stage process to define to respondents the learning which was being surveyed. First a showcard emphasised an interest in any learning (but used a vocabulary from formal education); the second stage emphasised the job-relatedness of the learning which was of interest.

The 'Training in Britain' survey of 1986/7 had one aspect which is of particular relevance and interest. It investigated from the 67% of the workforce which reported no participation in vocational education or training whether they had participated in 'other learning experiences at work which they did not regard as training'. 50% of these respondents gave affirmative answers. For example, 30% reported having been to 'talks, lectures, exhibitions or films connected with work'; 26% had 'studied technical books, technical magazines or instruction manuals'; 26% had had someone 'at work' teach them 'to do or make certain things'. Nevertheless, 42% of this group of workers not participating in so-called vocational education and training 'could not imagine undertaking (any) future training' (Training Agency, 1989).

These surveys are insecure quantitative indicators if used in relation to self-directed learning in the workplace. Regrettably, at present, the United Kingdom has no qualitative research on this topic of the type undertaken, say, by Marsick (1987) and Marsick & Watkins (1990).

4 Adult Self-Directed Learning in the Community

As indicated in section one above, this section of the chapter is not intended to discuss the topic of self-directed learning in higher education. There is relevant literature - particularly if one extends appropriate definitions to include individualisation of learning materials and notions of student autonomy (cf., for example, Boud 1988). Moreover, there have been in the United Kingdom experimental schemes of 'independent study' in higher education and theoretical accounts and evaluative studies have been published (Percy & Ramsden, 1980; Robbins, 1988).

Rather, this section concentrates upon research into the general phenomenon of adults learning in the community - be it the home, the workplace or places of recreation and meeting others - and learning without reference to the formal structures and professional individuals institutionalised by our society as 'education'. Possible variations in the use of terminology notwithstanding, it is clear that, by contrast with the USA and Canada, there has been very little empirical investigation in the United Kingdom of this phenomenon. The most obvious explanation for this absence of United Kingdom research activity is the practitioner-led nature of United Kingdom continuing education, and its emphasis upon practice and upon participation in formally organised classes. Recently, McGivney (1992) published a research review upon the topic of 'tracking adult learning routes' and failed to consider the phenomenon of adults progressing through learning undertaken independently of formal courses.

One can uncover some isolated examples of United Kingdom research over the past 15 years into adult self-directed learning. Brookfield (1980) investigated twenty five adults aged 40-65 years in the West Midlands who were acknowledged by their peers to be experts in a chosen field of interest or hobby. Brookfield contrasted his findings with those of Tough (1971), the doyen of American researchers in independent learning. Brookfield's subjects, unlike those of Tough, measured their learning projects in years, not hours, and spoke of new avenues of interest and enquiry regularly arising. Brookfield's self-directed learners gave evidence of documenting their learning activity and using subjective and objective measures for self evaluation.

Another small-scale piece of research was by Strong (1977). Using Tough's methodology, she researched the self-directed learning of eighteen college lecturers. Strong concluded that members of her (highly select) sample were more prone to self-teaching than Tough's American subjects and resistant to identifying the sources of assistance which they had used. Importantly, the most frequently cited learning projects for those learners were work-related. A similar finding can be found in the very different study by Sargant (1990). This was quantitative research based on a market research survey of 4,608 adults. 10% of the sample reported that they were not attending formal classes but were 'studying informally' at the time of the survey. 'Studying informally' was not further defined. Younger people, men, and higher socio-economic groups were more likely to be 'studying informally'. 47% of 'studying informally' was undertaken at home; the next most popular location being the workplace.

Work by Percy et al (1988) contains relevant contextual material for the study of self-directed learning in the United Kingdom. A qualitative and quantitative investigation of 800 voluntary organisations societies and clubs, in three contrasted geographical areas of the north of England, demonstrated the prevalence of a large amount of 'learning activity' (not necessarily the same as 'learning') among adults attending these organisations. Some of this 'learning activity' was work-related in the sense of voluntary and community roles being non-paid 'work' and having a similar function in the generation of an individual's self-image as paid work. This 'learning activity' was characterised in the study as being of a variety of kinds, some highly informal such as 'apprenticeship learning', 'practice learning', and 'learning from experience'. Informants in these organisations often did not recognise a distinction between 'learning' and 'doing' and, whether or not there might be proved to be a learning outcome to their activity, denied that 'learning' was a conscious intent of their behaviour. The study raises interesting theoretical and methodological issues of importance to research into self-directed learning. Can adults be recognised to be learning even if there is no prior intention to, or consciousness of, or direction to, learning? A more recent study by Elsdon et al. (1995) brings together a large quantity of case-study material on adult participation and learning in voluntary organisations which bears upon these issues.

Percy et al (1995) undertook the most recent, and relatively substantial, investigation of self-directed learning in the United Kingdom. This work is a quantitative and qualitative study of self-directed learning among 117 informal carers (i.e. those caring in the home for disabled or sick people) and 10 disabled adults. The study explores, in particular, the role-learning which might be undertaken by carers (65% of whom had no warning of the responsibilities which they were suddenly called upon to shoulder) and also the 'spare-time' interests or hobbies which they pursued. The main conclusions of the study were that, even in social contexts in which one would hypothesise that adults have to undertake self-directed learning in order to cope with their lives or conditions, there is no straightforward pattern of learning intention, learning process, and learning outcomes. Spear and Mocker's (1984) concept of the 'organising circumstance' is certainly relevant but there is no deterministic relationship between life-cycle positions, personal context and major life events and the advent of self-learning. Self-learning developments are characterised much more by chance and convenience, than by rational intention and logical progression. Adults do not necessarily plan learning; they do not necessarily choose the most effective resources with which to learn; they do not always know what or if they have learned. The study lays emphasis upon a concept which it terms the 'contiguous resource'. Adults use the learning resources (be they materials or people) which are close by, convenient and least-threatening. In this way adult self-directed learning in the community is both serendipitous and uncertain. This is not to say that the learning is ineffective or mistaken (although it might be). Equally it is not to say that it does not show progression, even self-evaluation (often it did).

In a theoretical paper, the same authors (Percy et al., 1994) argue that the phenomenon of self-directed learning among adults in the community is not a threat to the formal provision of courses and classes by professional adult educators. The threat lies more in the ignorance of an important phenomenon in our society. Comprehensive research into self-directed learning in the community would make possible a proper understanding of the spectrum of learning opportunities - from the formal to the serendipitous - necessary in our kind of society and of the nature and mechanisms of their complementarity. Moreover, Percy et al. note that the questions which we are liable to ask and the judgements which we are prone to make of self-directed learning all presently come from a vocabulary of practice developed within, and appropriate to, the formal provision of continuing education.

5 Concluding Remarks

The trends and developments, the projects and research findings from the United Kingdom which have been referred to in this chapter have manifested varying forms of self-direction in learning. To some extent the notion of 'self-directed learning' has been used as a flag of convenience under which to review the current state of development in different but related areas of learning and to look for common themes and indicators. However, much of what has been described in this chapter, particularly in sections two and three, is of a pragmatic and atheoretical nature. Most aspects of continuing and post-compulsory education practice in the United Kingdom are underfunded and struggling to achieve what they have defined as their mission. The culture of post-compulsory education has become increasingly competitive and concerned that only the fittest should survive. Developments discussed here - open learning, accreditation of prior experiential learning, work-related learning - have largely not been fostered in the United Kingdom because they relate to any positive educational philosophy such as student-centredness, educational justice or educational relevance. Rather they have been encouraged for the sake of savings on expenditure, increase in student numbers and institutional reputation.

It is clear that at present in the United Kingdom there is no overarching theoretical framework which encompasses the range of learning situations in which self-direction by the adult learner may be a feature. There is certainly no comprehensive theoretical framework which incorporates self-direction in higher education, self-directed work-related learning and adult self-directed learning in the community as discussed in section four of this chapter. It is possible that the theoretical exploration and empirical investigation of self-direction in learning in the workplace, if proposed with the appropriate formulations and watchwords (and with a heavy steer towards practical and disseminable outcomes) would be funded by public agencies. The probable pay-off that a higher proportion of the workforce might be found to be engaged in work-related learning through the phenomenon of self-direction will be seductive for the paymasters. The possibility that self direction in work-related learning might be improved, developed, encouraged and rewarded by some association with the formal system of vocational education and training will be examined with interest by the providers of continuing and further education.

If so, there will be a responsibility on the current generation of empirical researchers into continuing education to be completely sure that any investigation into self-directed work-related learning is valid, meaningful and generalisable. That means that we need to start from a provisional model of adult learning in its social contexts which includes formal provision of continuing education, self-directed adult learning and the spectrum of adult learning situations that lie between. It implies that the research must not be overly macro on the one hand (that is to say, purporting to investigate self-directed learning in the whole of industry rather than in a particular employment sector with its traditions, culture, constraints and recruitment patterns). Nor should the research be overly 'micro' (that is to say, hoping to make generalisations of value from an unsophisticated qualitative study of a single shift of a single company in one corner of industry). We will need to know not only what self-directed learners at work do, but how they perceive what they do and what it means to them. Understanding the meaning of self-directed learning at work requires understanding as well the meaning of 'work' to the learners, and probably, too, the meaning of both to the quality of life.

Importantly, researchers in the United Kingdom into self-directed work-related learning will need to take care of how their findings are interpreted. Hypothetically the dynamics of self-directed learning among adults are complex, fragile and fluid. Misunderstanding of them at the superficial level will be too easy. If adults are learning for themselves, the media headlines and policy-makers executive summaries might run: why are we spending so much money on formal systems of education? The interdependencies between self-directed and formal learning are uncharted; begin to dismantle, inhibit or cost-cut one aspect on the spurious understanding of incomplete evidence and the whole edifice may crumble.

References

Boud, D. (1988).Developing student autonomy in learning. London: Kogan / Page. New York: Nichols Publishing Company, 2nd edition.

Boud, D., Keogh, R., Walker, D., (eds.) (1985). Reflection: turning experience into learning. London: Kogan / Page. New York: Nichols Publishing Company.

Brookfield, S. (1980). Independent Adult Learning. Doctoral thesis. Leicester: Leicester University.

Candy, P.C. (1991). Self-direction for lifelong learning. San Francisco: Jossey Books.

Elsdon, K. et al. (1995). Voluntary Organisations: learning, citizenship and change. Leicester: National Institute of Adult Continuing Education.

Employment Department (1994). Individual commitment to learning: individuals' attitudes. Report on the quantitative survey. Sheffield: Employment Department.

Evans, N. (1985). Post-education society: recognising adults as learners. Beckenham: Croom Helm.

Forrester, K. & Ward, K. (1993). Learning at work: final research report. Leeds: Leeds University Department of Adult Continuing Education.

Geale, J. (1995). Achieving growth. Stimulating the demand for Continuing Professional Development among young professionals in North West England. Lancaster: Lancaster University Department of Continuing Education.

Gibbs, R. & McCarthy (1996): 'Employee development programmes - the impact of external agencies'. In K. Percy (ed.), Towards a learning workforce. Lancaster: Lancaster University Department of Continuing Education.

Knapper, C. (1988). 'Technology and life long learning'. In D. Boud op.cit..

Knowles, M.S. (1970). The Modern Practice of Adult Education: Andragogy versus Pedagogy. New York: Association Press.

Marsick, V.J. (1987). Learning in the workplace. London: Routledge

Marsick, V.J. & Watkins, K.E. (1990). Informal and incidental learning in the workplace. London: Routledge.

McGivney, V. (1992). Tracking adult learning routes. Leicester: National Institute of Adult Continuing Education.

Pedler, M. (1994). Towards a learning company: concepts and practices. New York: McGraw Hill.

Pedler, M., Burgoyne J. & Boydell, T. (1991). The learning company: a strategy for sustainable development. New York,:McGraw Hill.

Percy, K., Barnes, B., Machell, J. & Graddon, A. (1988). Learning in voluntary organisations. Leicester: NIACE.

Percy, K., Burton, D. & Withnall, A. (1994). Self-Directed Learning among adults: the challenge for continuing educators. Leeds: Association for Lifelong Learning.

Percy, K., Burton, D. & Withnall, A. (1995). Self-Directed Learning among adults: empirical studies of community carers and disabled adults. Lancaster University: Department of Continuing Education.

Percy, K. & Ramsden, P. (1980). Independent study: two case studies from English higher education. Guildford: Society for Research into Higher Education.

Policy Studies Institute (1993). Employment in Britain. London. PSI.

Robbins, D. (1988). The rise of independent study. Milton Keynes: Open University Press and Society for Research into Higher Education.

Rowntree, D. (1992). Exploring open and distance learning. London: Kogan / Page.

Sargant, N. (1991). Learning and Leisure. A study of adult participation in learning and its policy implications. Leicester: National Institute of Adult Continuing Education.

Spear, G.E. & Mocker, D.W. (1984). 'The organizing circumstance: environmental determinants, in Self-Directed Learning.' Adult Education Quarterly 35, 1, 1-10.

Strong, M. (1977). The autonomous adult learner. M.Ed. dissertation. Nottingham: Nottingham University.

Temple, H. (1991). Open Learning in Industry. Harlow: Longman.

Thorpe, M. (1988). Evaluating open and distance learning. Harlow: Longman.

Tough, A. (1971). The adult's learning projects. Toronto: Ontario Institute for Studies in Education.

Training Agency (1989). Training in Britain. A study of funding, activity and attitudes. Individuals perspectives London: HMSO.

Weil, S.S. & McGill, I. (eds.) (1989). Making sense of experiential learning. Milton Keynes: Open University Press and Society for Research into Higher Education.

Maria Joao Malheiro Filgueiras

Self-Directed Learning in Portugal

1 History of Self-Directed Learning in Portugal

Giving for the time being the broadest interpretation to self-directed learning, we will discuss its meaning in the following chapter - it is possible to say that the history of this kind of learning really began in Portugal with the 'old apprenticeship' system. This is because this system was also an individual form of learning, very much dependent on the initiative and the capability of the person to learn. Therefore we can argue that the process required an attitude of self learning from the 'apprentice'.This system had greater importance before the sixties because by then the first vocational training centres were integrated into the existing network of the Ministery of Labour.

This period also saw the advent of the first schools offering courses based on distance learning, especially in certain technical areas but with on increase in the years that followed in some very different fields. The model adopted, which will be explained in the third chapter, was initially based on an American distance learning school.

In the early seventies, language courses based in language laboratories appeared which were successful and which are still being run. However, most of them have adapted some more modern equipment.

Already by the eighties the Institute of Employment and Vocational Training had created a very sophisticated laboratory based in the Laval methodology whose main objective it was to support the training of trainers' activities at a national level.

It was also during this period that the first individualized courses began to appear using, as a pedagogical resource, the computer, i.e. computer based training courses. This kind of learning is used more in the vocational training field and especially in updating employed people from the companies to the use of new tools and methods of work, namely when this process is in any way related with the implementation of new technologies. With this learning tool as a new possibility, there was an increase in this kind of courses and even today they are working regularly in some institutions, not only in the companies themselves but also in some of the providers. It is important to mention that even the Institute of Employment and Vocational Training began to develop some individualized courses on a flexible basis, that means with the possibility of using traditional or computer based training resources.

Today, an institute exists which holds training seminars using telematics designed to updating people with a higher level of education. This is linked to a European network called Programme for Advanced Continuing Education. In the Technical University of Lisbon, to which this institute is related, a lot of research is carried out in the field of applying new technologies with the objective of turning the learning process into a more individualized and more flexible process. This research also includes the intelligent tutors as a tool of computer based training.

The most current example of self-directed learning in Portugal is the training that has been developed in AutoEuropa, based on the principles of the learning organizations following a model of multidiciplinary teams with high levels of responsibility and self development accompanied by a notorious development in the working process. Everybody entering the company had to follow this work/learning process for a period of normally one year.

It is important to mention how also in the normal education system the individualized learning has had some developments, namely using the television as a preferential tool. This was especially used to reach those distant regions with access difficulties to the normal school schemes. Therefore, a traditional class model was used but the teaching activity was performed through the 'television' installed in these classes. The teaching 'curricula' were also those followed in schools with the presence of teachers

Nowadays, there are already a number of pilot projects in certain schools using some computer based training ressources at different levels. However this is always carried out with the support of teachers and normally in partial terms and only for certain subjects and applications.

In the context of the education system the most important case to name here is the Portuguese Open University, which has developed special courses aimed at updating teachers. In this university a multimedia institute exists which represents a real support for the development of didactical resources.

It is also important to state as a final comment that Portugal is involved in a significant number of transnational projects with an extensive range of partners, institutions and countries within the context of the European programmes, and some of these are exactly related with the development of new ways of learning, namely self-directed learning:

2 Meaning of Self-Directed Learning in Portugal

As far as we are aware, there has not yet been a broad discussion at a national level about the questions being raised here on 'self-directed learning'. This means that at the conceptual level, only a few researchers have developed any ideas in this domain. However, the existing concepts have been applied in very different situations and also for a long time, as was mentioned and will be explained in more detail in the next chapter.

Trying to make a summary reflection upon the several concepts already developed by a number of authors involving some more restrictive and some broader definitions, there seems to be a common point to consider that a process of self-directed learning must always be dependent on the will and the initiative of the learner. This leads to a learning process in which there is an attitude of self-regulation and self-determination from the individual her/himself and, although affected by the social and institutional constraints, the process is centered on the learner who is the real actor and has the capability to decide. As Rocha Trindade wrote in 1992, the existing experience shows that the 'andragogic model', the model for adult education, is more autonomous and self-directed then the models aiming at the education of children and young people. This is essentially based on the fact that adults normally find for themselves the needs and the motivation to learn. Therefore, this model seems to be better adapted to self-directed learning.

We now present the definition given by Knowles (1975, 18): "In its broadest meaning, 'self-directed learning' describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementating appropriate learning strategies, and evaluating learning outcomes". This definition allows us to think that all the activities and behaviours carried out by individuals that bring some added value in terms of knowledges and/or competencies, skills or even merely attitudes towards the life of this individual, constitute a learning process. This process can be more or less structured ranging from the informal processes to the more organized training schemes. This means that increasingly we find ourselves living in a society that requires from its members a continuous effort to adapt to new conditions of life in the social, family and professional fields. This effort must be translated acquiring real new competencies in all these fields to be able to participate in a positive way in the normal social life. So, for instance, in the professional field this updating of knowledge and competencies can be achieved in a very personal and individual way, when the worker, being conscious of his needs, tries to obtain some information in accordance with these needs, through written documents or by having talks with people with greater knowledge in the respective field; in the other fields, the gaining of competencies is brought about rather through the sources of life changes, life events as well as one's own personal historical development. This is the main reason why today the learning process is considered to be a process of life, which means from the moment the individual is born until it dies, and no longer a process restricted to specific, fixed periods. The most representative recognition of this fact is the designation, by the European Union, of the year 1996 as the year of 'Life Long Learning'.

According to what has been said and after having presented this in the previous chapter we may conclude that in Portugal, as in all the other countries in this permanently changing environment, the whole of the working population makes a great effort to keep up-to-date and to meet the alternating requirements of the labour market. Most of these efforts belong to a very self-directed learning process, including all its informal types. Other follow more structured ways of learning, for example existing organized courses. The framework of Portuguese law for vocational training allows workers from those economy sectors in a period of restructuring to take part in a project towards their own development according to their personal needs, with the aim that they neither lose their job nor seek another. A worker who presents his project to the employment centre may even be given the funding to be able to proceed with it. But even if part of the project involved attending a normal, traditional course, when considering the project as a whole we are of the opinion we are dealing with a self-directed learning activity. After all, the worker himself diagnosed the situation, establishes his needs, sought the best solution and is able to present a final evaluation.

However, the most common application of the concept of self-directed learning has really been in the field of individualized learning. What we mean by this is the distance learning system, where there is in fact a physical distance between the student and teacher or tutor, and in which the pedagogical and didactical resources may be very different, ranging from written materials structured in a sequence of pedagogical modules containing the self evaluating tools through to the use of much more sophisticated tools based on computer based training or even telematics, passing through all the possibilities combinations in-between; the other existing individualized courses are normally organized, like distance learning itself, in sequences of programmed learning, which means that the training is designed with objectives centred on the student normally using an approach towards problem solving methodologies, usually designated as the systems approach to training. The main difference to distance learning system depends not upon the materials used nor its design and organizion but rather in the way these are used. This means that the programmed learning can be used in normal procedure courses with the presence of a teacher using the materials according to the appropriate methodologies, or used in an individualized way but in a classroom and with the presence of a tutor whose purpose is only to guide the students through the materials and to help them when necessary by clarifying the matter.

As we have already mentioned, there are a number of minor possibilities for self-directed learning based on normal materials, that is without any specific structure or pedagogical sequence appropriate to a more individualized learning.

3 Research and Practice in Portugal

As we have already said, we will consider the first form of 'apprenticeship' that existed, the beginning of self-directed learning in Portugal, and we will take this description up to the present day when the learning models are obviously more sophisticated and include many modern 'multimedia resourses'.

In this context self-directed learning in Portugal we can say, began with the need to train the young people in qualified professions for them to be able to replace the older workers in the company. The process consisted in putting the 'apprentice' side by side with a very good performance worker who was also responsible for the younger staff. This 'apprentice' should carefully observe the way the tasks are performed and also the behaviour of his 'tutor' and try gradually, to do the same with an increasing degree of aptitude. In this process, of course, the quality of the tutor is fundamental, not only in technical terms, but also in terms of his general attitude, the way he approaches his work, his colleagues as well as the company itself. There was a kind of 'osmosis' between tutor and apprentice, but the real learning process was much more dependant upon the 'learner' himself than anyone else. She/He was meant to develop his/her own strategy of learning in a sense of being more quickly and more effective, realizing of course that upon this depended his career advancement within the company.

When some years later a network of vocational training centres within the Ministry of Labour came into existence, structured courses for several professions were offered and, of course, the situation of the appentice already in possession of a qualification when he joined the company was completely different from that in the very early days. This process of apprenticeship was for a long time not entirely abandoned despite a decrease because:

- on the one hand, vocational training was very limited in those days, being found only close to the big cities or to substantial concentrations of industrial activities
- on the other hand, it is always necessary to introduce the new worker to the normal production and social life of the company.

Curiously, in the companies' qualification levels tables the category 'apprentice', refering to this system, still appears.

Including also in this concept all types of distance learning, namely correspondence courses, it was during the sixties that, influenced by certain American schools, the first Portuguese experience of this kind happened. The Portuguese people were increasingly feeling the need to gain a professional qualification in order to have better access to the labour market, but the offer of vocational training was limited. They enthusiastically accepted therefore the appearance of the first correspondence courses. The first schools to appear tried to cover a wide range of professions, from the more administrative field, like languages, secretarial skills, etc. to more technical fields like eletrotechnical, eletronical and mechanical skills, not forgetting others like sewing, etc.

These were normal correspondence courses of, on average, good quality, adapted from the courses of the already mentioned American schools. Those students interested in following a course placed an order and were sent the respective material. These consisted in written modules (the subjects being divided in modules) to be studied. There was also the possibility, especially for the courses in the technical fields, of ordering materials in order to be able to carry out experiments - a kind of kit with the necessary tools. Occasionally, the school would send multiple choice tests and the students, after completing the test, would return it to the school for correction. Following the correction, the test was sent to the students with the right answers and clear explanation of the question which were answered incorrectly. Normally, there was no further direct contact between the student and the school. However, at least the better organized schools produced a monthly edition of a newsletter through which the students could contact the school and other students as well. They also held courses in the summer holidays with teachers present as a way of consolidating knowledge.

It was also during this time that language laboratories appeared in Portugal in which people could strive to achieve a level of competence in the chosen language, normally English or French, in an individualized way and following a pedagogical sequence. Also included in this sequence was a self evaluation of the various learning stages.

It is important to note that in the eighties, the Institute for Employment and Vocational Training (IEFP), the Portuguese institution belonging to the Employment Ministery responsible for the implementation, at national level, of the employment and vocational training policies, created a very sophisticated laboratory with Laval technology (Quebec - Canada). Even today, the training of trainers is performed here. Besides that there are also good opportunities to take individualized courses related specifically to the design of media for training activities. At the end of these courses, the trainers recive a certificate recognized even by the respective Canadian authority. Still in the eighties, the Institute for Employment and Vocational Training started a course for the training of trainers with an individual use possibility, structured in modules, each one containing its own evaluation originating from the International Labour Office Center in Turin (Italy).

Not very many years later, the individualized learning had a new improvement with the advent of the new technologies as well as with the appearance of the first author languages to the computers, which were turning distance learning into a new possibility because it was making the introduction of a course in the computer much more easier than it was before, when it was really necessary to conceive all the software. So, these languages made available to people dealing with pedagogical and educational subjects, but not being informatics experts to use the computer as a tool, a pedagogical resource for the training.

Considering the enormous advantages of offering workers an opportunity of updating their knowledge or of achieving a higher level of competence in certain emerging fields, for example the application of computers in normal work routines, a number of larger companies began to introduce this kind of computer based training in their training activities.

One of the most well known cases was the Portuguese Telecom. In the mid eighties, there was a massive introduction of computers in the company and Telecom faced the problem that most of the workers were not familiar with them. Added to this was the routine of performing the work with traditional methods and normal tools and this led to the usual insecurities associated with change. The company, being aware of this problem, decided to launch a huge programme named 'FONTE', which means 'source' in Portuguese, to retrain around 1000 workers at different levels , all over the country. The purpose was not only to get an initial group of employees trained, but also to motivate the others to follow their example. To continue with the training activities, and because it was really not possible with conventional methods to train the actual number of workers needing it, at least with an adequate timing and with the required quality standards, the company bought some computer based training courses and spread them in all regional areas and supported those workers that wanted to do it. As far as we know, this was the first experience in computer based training with personal computer, with a real individual and only depending on the will or the free initiative from the interested people inside the company.

Meanwhile an institute was founded in Lisbon that was only developing courses in computer based training. Trainees were going there to attend courses that were run on an individual basis and with help of only a few tutors. The curious thing in these developments in computer based training is that it was usually begun to train people in the use of new technologies. Using the new technologies themselves as pedagogical tools seemed to the most interesting way to do this whilst also reinforcing the learning process. It is also of importance to mention that besides in the field of new technologies, the possibilities for this learning process have been expanding, and in updating and perfecting training especially it has a wider application.

In a number of large companies, for example, this process is very much used in simulating systems for the adaption to new equipment, mainly when the companies have an international context. Of course, those more conventional areas in distance learning, as for example the field of foreign languages, continue as they are but have in most cases also developed in the sense of having acquired computerized equipment.

Even in the nineties, it is very interesting to use distance learning in a number of fields and now with a more flexible range of resources. The computer would continue being used but without excluding mixed learning processes including presential situations with a tutor and also with a wider range of pedagogical and didactical materials, namely those related to the system of evaluation. An interesting example of development of this kind is the case of the most important training organization in Portugal's banking sector. In fact, this institution belongs to the sector employers association. The course created is a long one lasting normally three years, and it is organized according to a mixed model with all the material intended for self learning, including the procedures for self evaluation at the end of each module studied, but holding a meeting each week with a tutor who can help the students overcome any difficulties and clarify any doubts.

The course is recognized in the sector and the students receive a certificate at the end of their training. This institution is also related to several other similar institutions all over Europe and took part in the development of a transnational training scheme within this network.

A further institution that tried developing new possibilities of studying through distance learning was a foundation linked with the Technical University in Lisbon as well as with the largest research institute in the field of information technology. This institute was created by a representative group of large companies, the majority being multinational and working in the fields of electronics or informatics, and by the participation of certain banks. One of the most important objectives of this foundation is to develop the vocational training, in the fields they deal with, in the respective field in a way that meets the training needs of the companies and professionals of the sector.

Following this objective they run some computer based training courses, but also other individualized courses using multimedia training tools. One of the most representative examples is the high technology courses they provide for technical workers who already have a degree, as for example engineers and other technical experts, run in the context of the European Programme for Advanced Continuing Education. These courses use telematic resources provided with the help of a satellite emission. In this institution research activities examining the use of new technology in the field of training have been developed. At present, the most important of these activities is the study of the development of a tool for computer based training called intelligent tutor, according to some models already developed by other international universities, which allows:

- a good motivation of the students by generating examples and exercises according to the learning rhythm of the student him/herself;
- a good and dynamic monitoring of the student learning activities;
- a very wide range of choices in a simulating environment.

In several training areas, namely electronics and electricity, it is intended to develop the necessary pedagogical material able to be used both in a self learning way and in a more traditional learning way.

Another example that deserves to be mentioned is the training system developed in the company AutoEuropa within a concept of learning organization which we can consider an self-directed learning system. This new concept has brought to the general context some need for change, which has influenced, to a certain extent, the increased use of these systems in other companies, either by an internal development of the companies or brought to them by some external consultants.

We have been talking about the several distance learning initiatives studied and implemented in the context of vocational training, especially those related to continuing vocational training. But distance learning was also, in certain situations, used in the normal education system.

In the case of this latter system, the form of media most often used was always the television. One of these cases involved the primary level of education, which was transmitted to a number of schools by television using some videocassettes and pedagogical written materials. However, this is only a temporary measure of solving the problem of access to those populations living in outlying regions. There is also the possibility for adults who, for one reason or another, did not finish their studies and want later to continue their academic carees, to have direct access to the examinations run by the ministery. In this case, the people involved must study in an autodidactical way for there are no especially adapted resources available other than those available to the students attending school in the usual way. There are also some experimental schools where new technology tools are included in the normal education curriculum at different secondary schools, but these are still in a period of testing.

Still within the frame of education, there is also an Open University. At this university, there are several distance learning courses especially designed to update teachers from primary as well as secondary schools. There are also, however, other courses representing a smaller amount of activities. Within this University ther is a multimedia institute in which research in the field of new tools for distance learning is carried out. The Open University itself is part of the Saturn European Network, which takes part in some research and development activities like the organization of training schemes and international events for the dissemination and promotion of knowledge related to distance education and training.

There is another important development in the field of distance learning being carried out in Portugal. It is a new system that the Portuguese Navy is implementing in quite a successful way. The Navy has a very thorough system of education and vocational training for the young people that join them either to begin a normal military career or to stay for their navy service. It is at this level that this new system is implemented. It is also of interest to note that the navy experts in education and training gained their degrees of expertise by doing a master in this field by distance learning at British universities.

There is, therefore, a growing use of self-directed learning in Portugal in all its diverse forms, and it appears this will continue in the future. However, it seems important to add that, until now, most of the situations in which the students follow a distance learning course, except those belonging to the normal institutionalized education system, did not lead to officially recognized certification.

4 Summary, Prognosis and Recommendations

Bearing in mind what has been written in the previous chapters, namely

- a relatively broad definition of self-directed learning, which in our opinion is the better approach, meaning by this we are able to include every process, beginning with the individual's own initiative when he is able to make his own diagnosis of his needs, to establish his own plans to carry them out and evalute the results according to the objectives he had set, not forgetting that this process is more identified with andragogic models (Knowles, 1975);
- the development of many different versions of self-directed learning since the more informal processes, ranging from distance learning courses, programmed learning systems performed (or not) as distance learning to simply using certain individualized methodologies but with the help of tutors in a classroom. All these systems use a wide range of pedagogical and didactical tools ranging from written materials through to much more sophisticated resources such as computer based training, telematics and maybe, in the future, intelligent tutors;
- the increasing use of all schemes of self-directed learning that we have been witnessing in the last years;

we may say that Portugal has a long tradition in applying training schemes that well fit the concept of self-directed learning and has followed a certain development that does not seem to be so very different from the paths taken by other European countries, by which we mean that Portugal currently faces problems common to other countries within the European Union:

- a growing number of unemployed people tending to be long term unemployed people with all the social problems inherent;
- companies that have to restucture themselves in a way that allows them to be more flexible, to have more quality and to remain competitive;
- an increasingly difficult scenario for the small and medium-sized enterprises to face all the requirements we mentioned earlier;
- a demand for an increasingly flexible qualified, in quantitative and qualitative terms, working population with also certain social competencies. This takes us to the need of more flexible solutions for the human resources development inside the companies, pointing to more specific and holistic solutions as a imperative for survival.

Considering everything we have already mentioned, we may say that the future points to a growing use of self-directed learning systems as a more adequate model to face the wide range of problems included in this framework of human resources effort to be able to face new demands and requirements. In the new White book of the European Commission, 'Towards a Cognitive Society', this tendency is very clear and all the recommendations reflect the need to find learning models that are more flexible and more effective, especially as regards small / medium-sized enterprises, and which can really offer to people in general the possibility of forming their own life-long learning process according to personal rythms and needs.

This points to the development of methodologies based more in the job place and very much focused on some key competencies, namely problem-solving orientated, as well as to certain improvements in the existing distance learning systems to increase the use of more sophisticated and more interactive tools, as for instance the intelligent tutor we have already mentioned. It is also very important to note that with the gradual perfecting of these individualized models, in terms of resources but also methodologies, the number of knowledge domains has been improved where possible.

A last remark concerning costs seems necessary. All these systems are normally associated with very high costs because of the research and development phases, the specialized know-how, the expensive equipment as well as the testing costs. Therefore this leads us to consider that any real development of these systems must be on a European basis with the possibility of a wide spreadout. It will be by this large diffusion and use that the costs can be reduced to a great extent. Besides the advantage where the costs are concerned, a more cooperative work between European organizations will lead to more multicultural training, more harmonized interfaces and procedures within the European Union, will naturally reinforce a real Union spirit.

References

Knowles, M.S. (1975). Self-Directed Learning. Chicago: Follett.

Trindade, A.R. (1992). Distance Education for Europe. Paper.

Cristina Zucchermaglio

Learning, Working and Social Practices: History and Future Trends in Italy

1 Training and Self-Directed Learning in Italian Working Contexts

The topic of 'organizational learning' has recently become an object of increasing interest in Italy within the world of work training as well as within organizations themselves (Tommasini, 1993). Unfortunately, the use and misuse of this label hide the fact that learning processes in work contexts are still somewhat 'invisible' and are not analysed in their specificity. As a matter of fact, there is still very little knowledge about the way in which professional competencies are acquired or about the contribution of learning processes to the organizational innovation or flexibility.

On the other hand, in the Italian corporate classrooms the learning process is mainly considered as a decontextualized and solitary process that should be carried out without those supporting aspects (other people, information, instruments, notes, books, etc.) typical of the informal contexts of learning (Lave, 1988). In fact, the view of learning , schooling and training as an enterprise in 'knowledge delivery' continues to dominate our society (Eckert, 1992). Most workplaces embody a view of learning that focuses on the individual in isolation. It assumes that knowledge is a substance that can be transferred to the learner's mind. According to this view, learning is an individual activity that is separable from, even independent of, social engagement.

From an overview of training and organizational procedures in Italian working contexts, it is possible to identify at least two common and relevant features (Zucchermaglio, 1995a):

1) Organizational training settings are clearly *separated from work-settings*: employees working on production lines or in offices are sent to a training department, inside or outside of the organization itself, only when the time

comes to learn something. And this is mostly the case for all employees, from managers to secretaries. The organizational structure and architecture assumes and implements a clear separation of knowing from doing (and of learning from working). In particular, organizations do not recognize that learning processes are continually present and active also in the workplaces, so they are in danger of cutting themselves off from a particularly essential source of innovation.

2) Organizational training settings are constructed as *traditional school settings*; a teacher talks to a group of learners about a specific topic for a definite number of hours. The learners listen and/or work individually with books or exercises, all of them doing the same things at the same rate. These contexts presuppose that learning is mainly a process of 'transferring information' from an expert (book, computer, teacher) to the heads of the learners in different ways which are practically all predefined.The learning model is the 'pouring model': information exists objectively and it is transferred into the head of the learner. The majority of training operators and designers are still basically immured in this sort of paradigm: they treat knowledge as a fluid, which pours into the student-vessels (Kay, 1989), thus using a learning theory, often implicit, that is still not yet supported by recent developments in cultural and social psychology of instruction, as we shall analyse further. For this reason, what is learned is rarely what people are expected to learn or thought to have learned and, moreover, knowledge acquired in these contexts is difficult to transfer and use in the workplace.

These educational practices have been empirically analysed in a recent study (Ajello & Zucchermaglio, 1993). The study was designed to identify the different kinds of training activities in a sample of Italian organizations and to highlight their implicit main educational principles.

In particular we will look at, through interviews with training operators of eight Italian organizations, the main aspects of the theory of learning 'in use', with special attention devoted to the opposition, or the relationship between, learning 'in' and 'out' of the classroom (Resnick, 1987) and to the resources of a 'good' learning context of work.

The results confirm the frame described above. What emerges is a very traditional, 'scholastic' and transmissive view of learning and training processes which shape the way with which the corporate classrooms are designed and managed. Beside this, a large proportion of the companies in our sample (75%) are also carrying out certain training activities outside the classroom, often describing this as on-the-job training or apprenticeship. These results seem very promising: companies appear to consider the workplace also as a source of learning.

However, a more detailed analysis reveals that in most cases there is only a simple 'exposure to the job', and more attention ought to be given to how the learning experience in the workplace should be designed, monitored, evaluated and improved. A 'magic' view of learning in context emerges as the most valued: you could put someone into the workplace and 'automatically' there would be some learning. What is almost completely lacking is an educational analysis and design of the workplace, in terms of structure of access of learners to ongoing activity, transparency of technology, social relations and forms of activity. No distinction is made between the apprentice as worker and the apprentice as learner. Certainly, the apprentice as worker will also learn something, but unless the work context is deliberately designed for doing-based learning, then the educational programme is likely to have gaps and inefficiencies. In fact, the great promise of apprenticeship lies not simply in the opportunity to learn while doing, but in the opportunity for genuine participation in the still existing communities of practice (Lave & Wenger, 1991).

This reminds us of the issue of access to the most relevant resources of the work context. Training departments should try to manage the access and visibility of such resources in order to shape the process and content of learning, that is the 'curriculum in context' for workers. In order to give educational relevance to the abused term of 'organizational learning', they should try to give a new direction to learning experiences in the work context.

2 Working and Learning as Social and Situated Practices

In order to survive in a period of rapid change, organizations must exploit their abilities to learn and innovate: changes in the market as well as in the world as a whole require enacting organizations. Therefore there are also economic reasons[7], and not only theoretical ones, for creating work contexts that are able to act as efficient learning contexts. Organizations should consider learning as an explicit objective and must create mechanisms and systems in order that such learning may take place. In fact, generative learning organizations are constantly searching for new social 'architectures' in which to better unleash the tacit (or implicit) and distributed forms of knowledge of their members (Brown & Duguis, 1991).

---

[7] In fact, organizations now spend prodigiously for the training and retraining of all its employees.

With this in mind, the design of any educational system must take into consideration both the perspective of organizational design and the the specifics of the learning process highlighted by the recent researches in cultural, social and educational sciences. The latter have placed emphasis on a number of important features of the learning process which perfectly match the organizational needs for distributed learning.

In a cultural perspective, learning must be considered as a constructive, social and situated process: a process of enculturation, of entering into a culture of practitioners; learning is a complex social action embedded in historically and culturally defined frames of activity (Vygotsky, 1990; Lave, 1988; Chaiklin & Lave, 1993; Engstrom, 1987). The analysis of learning processes occurring in everyday contexts and of those found among traditional populations that have not 'invented' a school system, highlights the fact that learning could be mainly described as a process of apprenticeship, that is as a graded, contextually embedded practice, inserted into a relevant frame of activity (Lave, 1988; Lave & Wenger, 1991; Hutchins, 1993). Learning about an activity depends on actually participating in that activity - not in an approximation to it. In this sense, learning does not always involve abstract, decontextualized subject matter, but also concerns work practices, social rules and the communicative practices of an organization. In an apprenticeship, much crucial learning happens without direct teaching. Although there is very little 'traditional teaching' - only occasional instructions or pointing out of errors by the tutor - there is much learning through this graded, contextually embedded practice. Seen from this view, learning is in part the process of socially constructing a communal understanding: learning is not individual and receptive at all, but a constructive and social process. In this framework, learning is not a specialized activity that should be directed by someone on a particular occasion, but a normal feature of the human functioning in everyday and working settings: learning is a social practice found in other cultural and social practices.

This perspective on learning has definitely overtaken the transfer model, by which knowledge and practice were considered in isolation, proposing a view on learning as a social practice, and taking knowledge back in the contexts wherein it is meaningful. From this angle, learning to work implies participating as a (initially peripheral) member of a specific community of practices (Lave & Wenger, 1991), and does not mean acquiring abstract concepts and notions of that set of practices.

In the approach we have just sketched, the notion of a community of practice is of central import: a community of practice is defined as "informal aggregates ... defined not only by their members, but also sharing the ways in which things are done and *events interpreted*" (Lave & Wenger, 1991, 32; italics added). In the communities of practice, social relationships are created around the activities, activities are shaped through the relationships and particular domains of knowledge and experience become part of the personal identities taking place in the community (Eckert,1993).

The last point underlines a situated and constructivistic approach to knowledge and learning: the communities of practice are the social and physical place where learning and work are accomplished. Knowledge and a level of competence are not contained in the heads of the individual members, but in the social organization and structure of the community of practice. The learning mechanism acting within the communities is in fact the progression of participation (from the periphery to the centre) in the practices, including the linguistic ones, which identify the community itself. The concept of practice indeed enables to define and describe the culturally valid contexts where specific actions and operations are learnt and used (Scribner, 1984). 'Work practice' is not equal to, or synonymous with, 'have an experience', and its cognitive specificity is related to the cultural specificity - namely the symbolic and technological artefacts - of the organizational context where they are carried out.

The view of learning and working as social, situated and constructive processes allows us to study work contexts as privileged loci in order to understand adult processes of knowledge acquisition and usage, besides providing new analytical ways of efficiently dealing with the problem of organizational learning, overcoming the separation between learning and working, and reframing all the problems of learning at work, giving space to self-directed forms of apprenticeship.

In this perspective, learning should not be an activity to be carried out a few times a year, but should be recognized and used regularly: organizations must not lose the contribution of these distributed innovation processes. There is a growing body of research (i.e. Brown & Duguid, 1991; Sachs & Scribner, 1990; Lei & Goldhar, 1992) that has reached the conclusion that differently organized work environments promote, as a result, different kinds of learning.

The implicit part of work competence could be learned more quickly and effectively in practice (Martin, 1982) if the work contexts were specifically designed to sustain patterns of knowledge-building discourse (Orr, 1990; Jordan, 1987). Well-designed work contexts are intended as a means of sustaining these discourse-supporting functions under the particular conditions imposed by the organization itself.

In this sense, work contexts able to sustain a continuous integration between working and learning are needed: the design of the organizational learning context should also take into consideration the design of the social organization of work itself.

If learning is embedded in work itself (rather than abstracted from it), the working and communicative practices of the community could create a potential 'curriculum' in the broadest sense (Lave & Wenger, 1991). We prefer to use the word 'could' because not all the communities of practice are automatically 'good' learning environments. A good learning community makes itself transparent to its members: members are able to find easy access to the resources they need in order to become full participants: and with direct access to people, places and activities, members' participation brings a sense of what the community is about, what possibilities it holds, what their own futures can be (Eckert, 1993). The relevant aspects of practice (which could be termed as the community's learning resources) include activities, artefacts, places, and people. More specifically: the sociocultural organization of space into places of activity; the circulation of knowledgeable skill; the structure of access of learners to ongoing activity and the transparency of technology, social relations and forms of activity; the segmentation, distribution, and coordination of participation within a community, etc. (Hutchins, 1993; Lave & Wenger, 1991). All these aspects should be intentionally designed as cultural tools for learning.

What emerges is the need to define a set of design principles for the construction of organizational learning contexts in which it should be possible to use and take advantage of the distributed and situated learning practices embedded in work, that is, such forms of non-formal education as on-the-job training, guided practice with a mentor and learning through doing on-the-job as a participant in a cultural community.

3 The Ethnographic Studies of Working / Learning Practices and Discourses

Studies of everyday work and communicative practices are needed to highlight real pratices of self-directed learning in organizational contexts.

With this aim, organizational research using ethnographic-observational methods supported by conversation analysis seems to be particularly adequate (Firth, 1995; Boden, 1994). A central feature of this kind of field research is that of contextualize methodology itself. The instruments and modalities of studying are therefore partially defined and perfected as the research goes along with a 'funnel' procedure of progressive focalization, where the results of each phase serve as input for the design of the next phase.

We will now present an example of this research area realized in an Italian software production company (Zucchermaglio & Fasulo, 1995), with the aim of analysing the actual practices of learning, working and communication that characterize a technologically advanced organizational context.

We started with a background ethnography of the organization. This included the initial contacts with the organization, the formal and informal meetings or phone calls when the research group presented itself and explained the research project, and the informants, particularly in the person of Marco, founder and associate of the company, who gave information about the structure and the general organization of work, a pilot observation of three days with full (audio or video) coverage of the work place and occasional talks with the professionals.

This preliminary phase was intended to familiarize the researchers with the work site and people as well as these with the presence of the researchers, the cameras and microphones. It was from the information gathered during this first phase that the specific work practices on which the analysis would focus were identified. We chose to observe the development of a specific project, called IPERDRAMA. IPERDRAMA is a multimedia support system for technicians working to control the national telephone network. The project involved two members of the company, the above mentioned Marco, and Sandro, an experienced computer professional, in conjunction with two members of the state company, ALTRA, who gave the commission for the revision of the product[8]. They are Pietro, employee of ALTRA with a field-based experience in computer technology, and Carlo, an engineer and Pietro's boss. The former participated directly in the technical realization of IPERDRAMA, whereas Carlo was the prescriptor and had a monitoring function in the overall project, representing the 'voice' of the client.

---

[8] The original product was also developed by the same group some years before, with the exception of Sandro.

114

The situations we will analyse here are seven meetings9 in which at least three of the four participants were present, devoted to checking the progress of the work and to establishing the successive phases. We regard such meetings as especially valuable situations for the research in this field since they can be viewed "as communication events that must be examined because they are embedded within a socio-cultural setting (...) as a constitutive social form" (Schwartzman, 1993, 39).

One of the main features of this type of research material is that of permitting several levels of analysis and focus. We did not start our analysis with a set of predefinite categories, but instead identified discursive sequences focused on the topics we deemed more revealing relative to some 'critical' features of work and communicative practices. In this sense, our interest was not directed at the description or modeling of work procedures and outcomes, but rather to detecting the situated cognitive-discursive strategies and resources used in the work practices aimed at the accomplishment of a technological product.

The perspective that views technological instruments as essentially social objects and as artefacts mediating our interaction with the world is today widely acknowledged (Norman, 1989; Wenger, 1990; Grossen & Pochon, in press; Lave & Wenger, 1991). Less widespread is a corresponding description of the processes of technology development, that is, a consideration of such activity as a social and situated practice realized by members of a specific community with particular knowledge systems and objectives. Rather, this activity is commonly described (and also prescribed in some cases), as a mere technical enterprise of which it is possibile to define in advance precise design principles and all the successive phases (design, realization and validation) to be followed in a preplanned order. This is sufficient to guarantee the realization of a technical product that matches the objectives the employer has in mind.

But the actual process of production of a technological system seems to work in an altogether different way. An aspect challenged by our observations regards the objectives of the employer: these are not present in any stable and definite way before the realization of the system begins. These objectives emerge and change through negotiation in the course of the work, as we can observe in this interaction between Marco and Carlo about future uses of IPERDRAMA:

---

[9] The seven chosen meetings were audio-visually recorded and took place in the presence of a researcher who took notes to capture those events that fell out of camera shot or outside the time span being recorded. All the observations were fully transcribed following the conversation analysis method (Ajello & Fasulo, 1994).

Excerpt 1
[D/12; February 16th, 15:30]

Marco ...tu- adesso è un po'che stai facendo i corsi sei:
you - you have now been giving classes for some time. You're
legato alla parte formativa. questo non è: (0.2)
bound to the training aspect; this one is not (0.2)
ta:nto impostato per la formazione.=
really designed for the training=
Carlo =NO.
=NO.
Marco questo è imp- è impostato sull'[informazio:ne.
this is des- is designed for the [information
Carlo [questo-
this-
questo deve essere imposta:to,: sull'ausilio
this must be designed as an aid
al docente per la formazione.
to the teacher for the training
Marco ma quando mai
it never was so/you must be joking
Carlo io l'ho sempre piazzato così questo=
I have always placed it this way
Marco =ade:sso, [(ma mica) (......)
now (but not)
Carlo [no sempre = sempre. questo qua è un prodotto che
no always = always. this is a product that
darà- andrà nelle mani degli assistenti per fare i docenti
will give- will go in the hands of the assistants to do
in prova. perchè non hanno nessun prodotto. . diciamo è un
proof teaching. because they haven't any product. let's say
ambiente dove loro chiamano- un ambiente di simulazione.
an environment where they call- a simulation environment
Marco eh: ma non lo metti in linea poi?
yeah but won't you put in on line then?
Carlo poi posso fare quello che vo:glio. lo posso mettere in
then I can do what I want. I can put it on
li:nea,=>eccetera.< lo debbo riappellare un help=in=linea
line etcetera. I have to rename a help on line
ma sicurame:nte- <è sta:to vendu:to all'esercizio, co:me
but for sure it was sold to the company as

> un supporto ai doce:nti, che stanno facendo adesso i corsi.
> *support for the teachers that are now giving the courses*
> >cosi è stato venduto.<
> *that's the way it was sold.*

The objectives of the technological system and also its future users were not only not defined before the start, but they are not even shared between the client and the producer. Moreover, the employer has no difficulty in agreeing with the system 'then I can do what I want' ('poi posso fare quello che voglio'). There is a 'grey' area of flexibility and negotiation also concerning basic aspects of the product, which, from the point of view of the needs of (an assumed) sequential planning, should have been made explicit far before this stage of the work. Interactional and organizational goals are constantly meshed during the planning and design phases of the work, so that the temporal sequence in which the different topics are addressed or recalled is not predictable, dependent instead upon the need to reach the joint understanding that is necessary to deal with the management of the activity.

Summarizing the main results (for a detailed description, see Zucchermaglio & Fasulo, 1995), the work shows the distance between a formal description of work practices and competences and their observations in the course of situated actions. Whereas the first are mainly concerned with single individuals dealing with their tasks (what an employer should do, what level of technical competence a technician should have, how a staff member should best manage meetings, etc.), the latter focus on communities of practice: they show the activities of groups trying to use the available resources in the best possible way, trying to gradually define a common objective and to learn to work together.

These results pose some educational and training questiones: The problem has to be solved of how to give a formalized and intentional instruction for non-existing work practices, typical of the traditional educational and training approach. The effects of such an approach are useless, if not detrimental. Ethnographic studies carried out within the organizations could contribute to this aim, in that, making explicit to the organizations their actual work practices provides them with the knowledge resources to take advantage of the incidental learning embedded in 'normal' work activities.

4 Research Perspectives on Self-Directed Learning

Such a perspective on organizational studies should substitute the practice of 'transfer' into the organization of knowledge acquired or produced elsewhere with a situated discovery and diffusion of the organizational competence.This type of research asks for a different relationship between productive organizations (and their staff) and research organizations (and their staff). Towards this aim, an important part of the research should be devoted to achieving a 'clear and shared pact' between the organization and the research institution. We believe it would be useful to create a habit of working within work sites as indispensable 'research places', since models and instruments of collaboration among companies and research institutions are still missing (Stucky, personal communication). Indeed, if the latter have to learn to regard organizational contexts as critical for the study of self-directed learning, organizations have to learn to regard internal research activity as one of the main roads to understanding and developing processes of organizational learning and innovation.

Only within this framework can projects of common interest be continued that would be able to yield knowledge on both situated learning/working processes and the real practices by which an organization is constituted as well as on those which it needs to develop and renew itself. By becoming aware of these practices (and of their problems) only can the organizations learn and develop (Engstrom, 1993).

This kind of research has thus both descriptive and applied goals: it is 'good' research when its results may be used to sustain existing communities of practice and to build working contexts able to help the recognition, the development and the diffusion of the inner competencies which represent the basic resources for organizational self-directed learning and innovation.

References

Ajello, A.M. & Zucchermaglio, C. (1993). The aquisition of expertise in the organizational learning environments. Paper presented at the symposium 'Learning in Work Context' 5th European Conference for Research on Learning and Instruction, Aix-en-Provence (France), August 31-September 5.

Brown, J.S. & Duguid, P. (1989). Innovation in the workplace. A perspective on organizational learning. Paper presented at the CMU Conference on Organizational Learning, Pittsburg, May.

Chaiklin, S. & Lave, J. (1993). Understanding practice. Perspectives on activity and context. Cambridge: Cambridge University Press.

Eckert, P. (1993). The School as a Community of Engaged Learners. Unpublished Manuscript, IRL.

Engstrom, Y. (1987). Learning by expanding. Helsinki: Orienta-Konsultit OY.

Engstrom, Y. (1987). Developmental studies of work as a testbench of activity theory: the case of primary care medical practice. In Chaiklin, S., Lave, J. (1993). Understanding practice. Perspectives on activity and context. Cambridge: Cambridge University Press.

Firth, A. (1995). The discourse of negotiation: studies of language in the workplace. Oxford: Pergamon.

Grossen, M. & Pochon, L.O. (in press). Interactional perspectives on the use of the computer and on the technological development of a new tool: The case of word processing. In L. Resnick, C. Pontecorvo, R. Säljö, (eds.). Discourse, tool and reasoning: Essays on situated cognition. New York: Springer Verlag.

Hutchins, E. (1993). Learning to navigate. In Chaiklin, S., Lave, J. (1993). Understanding practice. Perspectives on activity and context. Cambridge: Cambridge University Press.

Jordan, B. (1989). Cosmopolitical obstetrics: some insights from the training of traditional midwifes. Social Science and Medicine, 28 (9), 925-944.

Lave, J. (1988). Cognition in practice: Mind, mathematics and culture in everyday life. New York: Cambridge University Press.

Lave, J. & Wenger, E. (1991). Situated learning. Legitimate peripheral participation. Cambridge, Mass.: Cambridge University Press.

Lei, D. & Goldhar, J.D. (1992). Implementation of CIM technology: The key role of organizational learning. Unpublished Manuscript.

Martin, J. (1982). Stories and scripts in organizational settings. In A.H. Hastorf an A.M. Isen (eds.). Cognitive and social psychology. Amsterdam: Elsevier.

Norman, D. (1989). Cognitive artifacts. Workshop 'Cognitive theory and design in human-computer interaction'. Kittle House Inn.. Chappaqua, New York, June 1989.

Orr, J. (1990). Sharing knowledge, celebrating identity: war stories and community memory among service technicians. In D.S. Middleton and D. Edwards, Collective remembering: memory in society. Beverly Hills, CA: Sage.

Resnick, L.B. (1987). Learning in School and Out. Educational Researcher, 6 (9), 13-20.

Sachs, P. & Scribner, S. (1991). Knowledge acquisition at work. Technical Report N. 22, City College, New York, February.

Schwarztman, H.B. (1993). Ethnography in Organizations. Newbury Park, CA.: Sage.

Scribner, S. (1984). Studying Working Intelligence. In B. Rogoff & J. Lave (1984). Everyday Cognition. Cambridge, Mass.: Harvard University Press.

Vygotsky, L.S. (1990). Pensiero e linguaggio. Bari: Laterza.

Wenger, E. (1990). Toward a theory of cultural transparency: elements of a social discourse of the visible and the invisible. Palo Alto, CA: Institute for Research on Learning.

Zucchermaglio, C. (1995). Organizational and cognitive design of the (technological) learning environment. In Zucchermaglio, C., Bagnara, S. & Stucky, S. (eds.). Organizational learning and technological change. New York: Springer Verlag.

Zucchermaglio & C., Fasulo, A. (1995). Incidental and intentional learning in work settings: The searching for a coherence. Paper presented at the syposium 'Learning to learn in vocational and industrial settings', 6th EARLI-Conference, Nijmegen (The Netherlands), August 26-31.

Nicholas Iliadis

Self-Directed Learning in Greece

1 History of Self-Directed Learning in Greece

The educational system in Greece is currently operating at a far cry from the contemporary needs of real life.

According to the National Statistical Service (1991) the population above 14 years of age in the Athens region is 3,918,274. Of this population, 0.7% has a post-graduate degree. 10.57% has a university degree, 5% a non-university degree from a technological institution, 27% has certification of higher secondary education, 13% certification from lower secondary education, 32.3% certification from primary school, 6% has attended the elementary school (for a number of years), while 3% has no schooling at all. The educational qualifications of the population in the other geographical areas in Greece are at a lower level.

The educational system does not have any links with production for the economic structure in Greece. There are qualitative problems at all educational levels, and a considerable number of university departments train students for declining sectors of the economy at complete variance to contemporary demands.

As a result of this situation, most young people enter the labour market without any form of professional qualifications or training. Self-directed learning is a compulsory practice for many people trying to penetrate and survive the world of work.

Craftsmanship in all kinds of fields has a long tradition in Greece and many people start working as unskilled workers in various areas of production and services. A considerable number of workers are employed in the field of agriculture. The practice of further training, which was recently introduced on a small scale into the Greek system, is, if available at all, unorganized and the programmes are rarely designed to satisfy any predetermined needs of the labour market. Some unofficial training is provided by various types of private institutions, but the students have to pay fees in order to take part in the programmes.

121

The majority of the workers in Greece, particularly at the lower professional levels, have been trained on the job through self-directed learning activities, following instructions on a concomitant base and stimulated by the need to satisfy the requirements of the working environment.

The diffusion of advanced technology on employment in our times, as well as its consequences on the demand for qualifications of a higher standard, are continuously felt with increasing pressure by many workers. As a result, a large number of private and public bodies offer various types of uncoordinated educational and continuing training programmes. These programmes are considered to be types of self-directed learning activities.

Self-directed learning in Greece appears to play a considerable role as complementary activity together with other social measures for the integration and reintegration of certain groups of the work force in the production process, for the reduction of variances that exist between regional and central economic areas, and in addition, for the assimilation of advanced technology in the less developed peripheral areas and sectors and branches of the economy. Finally, it should be mentioned that some educated people become involved in self-directed learning activities in relation to various subjects purely for self-satisfaction.

2 The Meaning of Self-Directed Learning in Greece

There is in Greece no official definition of self-directed learning. However, various educational activities such as continuous vocational training programmes, seminars for specific groups, programmes offered by public and private institutions on particular topics of interest, are considered to be forms of self-directed learning. Individuals are able to go through these educational channels in order to obtain knowledge and capabilities in accordance with their particular choices and needs. It must be noted that there are no mechanisms for an official assessment and certification of these forms of qualifications developed out of the official educational system channels.

On-the-job training can be also considered as part of self-directed learning in Greece. There are no clear policies in relation to 'on-the-job training' from the majority of companies. Many workers learn by themselves starting as manual workers without having any real form of introduction to learning.

In general, the meaning of self-directed learning is 'learning with the responsibility on the part of the learner through the actualisation of the available information mechanisms'. Self-directed learning in this form can be an effective means of active participation in current issues. It can contribute especially to the development in the transfer and dissemination of technical knowledge and to personal development as well as have a positive impact on working people, the economy and the labour market.

The general public has not become aware of the potential of self-directed learning, nor has a suitable environment nor informational resources been created. Learning is not considered part of the economic policy. Traditionally, the basic feature of the Greek learning activities are strongly related to the classics and literary elements. This is partly due to the fact that the 'natural economy' of Greece never did require the educational system to be differentiated from classical education nor prepare labour force for production.

In spite of all these deficiencies, a number of individuals are able to orient themselves through self-directed learning towards modern high-level technological sectors and management studies. Such activities mainly involve people already highly educated, whilst the majority of the work force lacks the capability and interest in self-directed learning. Most of these work in the many small family enterprises in Greece and are indeed those who have the greatest need to participate in learning programmes. However, they lack the knowledge and information as well as the necessary resources for this participation.

There is a need in Greece for the development on a large scale of the ability to plan, implement and control self-directed learning activities in relation to a desired outcome. This ability must ensure not only technical skills but social and general ones as well. The state must provide information, assistance and incentives for the application of suitable practices leading to social and economic development. Actions must be undertaken on a large scale to inform the general public about the role, the need and the significance of self-directed learning within the framework of the information society and to promote a suitable value system.

For the time being, activities relative to self-directed learning have not passed the stage of being merely isolated experiences. Only a small percentage of the population benefits from its potential. Self-directed learning in Greece is mostly a cultural element integrated in the culture of a certain percentage of highly educated people. However, it has been applied continuously by a number of individuals in order to allow them to penetrate the labour market and progress in their working and social life. It is with this aim in mind that individuals become involved in programmes they have selected themselves offered by various institutions, study the instructions and information relative to a variety of subjects, work under the supervision of various professionals receving a small income for their trouble, and take part in seminars etc. Self-directed learning is mostly activated through a process for surviving in the market or for satisfying individual needs for self-development.

Due to the rapid changes in the work organisation, the educational system is unable to satisfy effectively the needs for new qualifications and specialists within the framework of its present structure and features. Self-directed learning could play a significant role in dealing with these problems. However, self-directed learning in Greece is still far from being integrated within a unified framework or policy which could contribute to the solution of contemporary problems such as prevention of unemployment, reintegration in the place of work, professional advancement, re-specialisation in correspondence with the needs of the production system etc.

The systematic classification of the forms of self-directed learning in Greece is difficult, if not impossible in practice. The majority of the population is not familiarised with the process of self-directed learning through the actualisation and organisation of the available informational resources, which in addition are very limited.

There are no open and distance learning systems in Greece for any developmental level. Various public and private educational consultants have recently been moved to try to create suitable educational networks by exploiting subsidies from the European Community.

A legislative framework exists concerning European social funding and state financing of training programmes for those who are interested which are then carried out by private enterprises. In general, the Greek work environment operates on a low level in terms of capability for competition.

In the USA, the rate of unemployment among those individuals with a low level of education and qualifications is six (6) times greater than the rate of unemployment among those with a higher level of education and qualifications (IRDAC, 1991). The high operating level of the economic and productive environment of the American society needs highly qualified individuals in order to function and to maintain or even increase its competitiveness. Correspondingly, in the United Kingdom the rate of unemployment among individuals with a low level of education is four (4) times greater than the unemployment rate among individuals with a high level of education. Likewise, in Denmark the rate is 4.8

times greater, in Italy 1.8 times greater and in Spain 1.3 times greater (IRDAC, 1991).

As a contrast to these countries, Greece's rate of unemployment among individuals with a low level of education is 0.8 times smaller than the corresponding unemployment rate of individuals with a high level of education. The statistics (IRDAC, 1991) show that educated individuals in Greece face greater problems in being absorbed and integrated into the work environment. This means that the Greek work environment operates on a low level compared to contemporary international standards and does not generally need highly-educated workers. This has various implications for the competitiveness of the production system as well as for the value system of the society.

A considerable percentage of self-directed learning in Greece relates to new technologies and their integration in everyday activities of certain groups, facilitating their work and increasing to some extent their efficiency. The information networks established on a still very limited scale, and the organisation of some university libraries with the use of such networks, contribute to the increase in the experiences in relation to self-directed learning as well as to the development of a positive attitude towards the process.

The development of a positive attitude towards self-directed learning and experience in relation to this process is of particular importance for the Greek society, since its educational system and general culture do not prepare people for such initiatives. The subject matter in Greek educational institutes is taught in a complete vacuum: the students lack any perception of the world beyond the walls of school; they are forced to memorise facts about this world; all learning activities are entirely dictated by the teachers, the usual teaching method being the 'chalk and talk' method. The students see no relevance of the subject matter to the needs of everyday life. Education in Greece has for years been dominated by grades and examinations leading to certificates for a socioeconomic status rather than to certification of knowledge and skills. In addition, the educational system together with the mentality of the people are oriented toward theoretical concepts rather than to the application of principles in real life situations. The need for familiarisation with educational practices emphasising learning for understanding and for application in a more pragmatic way is becoming increasingly important for Greek society.

Some Greek educators consider self-directed learning to be a method of learning which can be utilised within courses in normal classrooms. The teachers play the role of the manager and facilitator of the educational process, while the students try to fulfil various educational objectives utilising the informational resources available.

The same process can be applied more broadly to society, where the state plays the role of the facilitator of the educational process and provides stimulation, informational resources and other necessary facilities (networks, libraries etc.), while the people learn to direct their actions and efforts according to the needs felt. Such a process would expect to produce cognitive skills, attitudes, values, preparation and continuous adaptation to the world of work, economic growth, social change and development.

3 Research and Practices in Greece

There is no data allowing the classification of people participating in self-directed learning according to age, sex, level of education, profession or other variable of interest. In general, it is assumed that more highly educated people become involved in self-directed learning activities.

But how to classify these activities, how to make accessible the allocated resources and how may the groups benefit from them - these are all questions to which it is difficult to find realistic answers.

These deficiencies in relation to self-directed learning in Greece demand the carrying out of a series of studies with a view to determining the type of self-directed learning required in conjunction with the increasing needs of contemporary society.

3.1 Empirical Research

No research has been carried out as far as self-directed learning in Greece is concerned, but specifically no analysis of the needs and practices required on a personal, societal, national, regional and cooperative level. Needs are often identified empirically, roughly and unsystematically. Hence, it is difficult to draw up a rational and effective policy in relation to self-directed learning.

Self-directed learning and continuing training through various public and private organisations are considered as having a significant overlap in Greece. Hence, research and evaluation of further education activities can be considered as relating to self-directed learning.

Further education is examined by some researchers as a variable having an impact on decentralisation and on the development of the various peripheral regions. Other studies examine the content that must be learned in order to face the needs of the new social and economic environment.

Qualitative problems have been observed with regard to the education and training provided in general along with a failure to link these to production processes and companies. In addition to shortages in specialists, there is an inability to develop necessary skills of a general nature, like the ability to ensure quality, to solve problems, to learn, to be flexible as well as to communicate.

Studies and proposals by the Technical Chamber of Greece (the association of Greek engineers who are also university graduates) support the view that if further social malfunctioning, squandering of economic and human resources and distortions in the labour market are to be avoided, there is a need to study above all the development of human resources throughout the spectrum of post-compulsory education, and for smooth integration in the labour market according to current demands and European perspectives.

Other studies refer to the economic factors determining forms of demand for post-compulsory education, university education, new types of school-industry cooperation and communication and also to the impact of the European social funds on the labour market, further education and the efforts for prevention of unemployment.

A considerable effort is being made to study the impact of the labour relationships and labour environment on productivity and on the policies and the organisation of institutions for the prevention of unemployment.

Within Greek society there is a broad based consensus that, due to the rapid technological, economic and social changes and the qualifications needed in contemporary society, initial education can nowadays only provide these qualifications in the form of 'starting qualifications', and that the importance of the various forms of further learning has increased when compared with the importance of initial education.

Studies in relation to the various types of further learning practices demonstrate that:

- they are not integrated to national, peripheral or local needs;

- they provide specialisation according to contemporary needs only to a limited extent;
- their content, organisation and application procedures do not satisfy contemporary specifications;
- they do not provide professional security or social re-integration.

As a result, self-directed learning can have a significant role in satisfying contemporary needs. Interested individuals can fit their needs by themselves to the appropriate learning activities.

There are indications of a satisfactory diffusion of advanced technologies at administrational level within big enterprises which are not a result of organised mass further education programmes, but rather an outcome of an unpredicted self-directed learning process with the utilisation of a variety of informational resources. At the same time, there are indications of poor information flow in relation to advanced technologies, within the enterprises, between the enterprises, in the working environment, as well as to the applied production processes.

A number of publications and studies stress the point that the improvement of competitiveness of the Greek industry is dependent to a significant extent upon the ensuring of an appropriately qualified work force. There is also an increasing demand for higher education, even in those areas suffering a decline in economic activities. This is mainly due to the willingness of the students to obtain a degree leading to certain expected privileges rather than to obtain knowledge and develop usable skills.

There are also qualitative problems in higher education, the most important being the conflict between technological education institutions (TEI) and universities.

Technological education institutions require a shorter period of study compared to universities and operate within a legislative framework which is different to universities and which requires lower educational standards for studies and lower qualifications for professors. Because of the quality differences in studies between technological education institutions and universities it is, according to Greek legislation, not possible to transfer credits for courses from technological education institutions to Greek universities. However, technological education institutions graduates demand almost the same professional privileges as university graduates. This is a particularly severe problem which has not been resolved in the twelve years since technological education institutions was established and which creates instability within the educational system, the development of graduate studies programmes, the application of the European directive 48/89/EU, the labour market and the formulation of policies for further education.

A significant move towards the solution of the problem of the lack of contemporary skills of graduates from all educational levels is expected from the various forms of further education. These could make a particularly important contribution to a rational distribution and redistribution of human resources in Greece on all levels, in a way which would be compatible with the needs of the labour market and which the official system of education has failed by far to achieve.

In Greece, only 42% of the economically active population has an income which can be controlled by the state in order to obtain the appropriate taxes. The national budget for many years has been based on a sum of ideals in relation to the economic policy without thought for the means for achieving the objectives. There are no specific guidelines for the development of the economy in relation to the development of human resources. The Greek industry depends on export and the economy is in a process of decline. Protectionism is still the basic characteristic of the economic framework, which is in complete variance with the guidelines of the European Union for the development of productivity.

The importance of continuing education in any of its forms, one of which being self-directed learning, for live, since further education is a basic element of contemporary society dominated by information and rapid change, has not yet been realised.

Neither the traditional type of industry nor the demand nor technological progress are able to be expanded upon whilst there is an increase in unemployment. The various signals for an increase in productivity are without any real foundation.

If we were to exclude the limited increase in productivity which can be achieved through some processes of persuading the labour force, the major percentage in increase can be achieved only through investments in the integration of new technology. This demands a development of human resources.

The only hope for the economic development in Greece is to take advantage of the new technologies and the technological revolution of the contemporary society through the suitable development of human resources. Self-directed learning can play a significant role in this process.

3.2 Practice

The supply, opportunities and facilities for self-directed learning in Greece can in no case be considered as an organised system. A large number of private and public bodies offer various continuing education and training programmes, providing opportunities for some type of self-directed learning activities. Examples of these bodies are: the Ministries of National Defence, Agriculture, Justice, Public Order, Industry, Trade, Research and Technology, Transport and Communications; The General Secretariat for Youth; The General Secretariat for Popular Further Education; the Hellenic Centre for Productivity; the Manpower and Employment Organisation of the Ministry of Labour; the Technical Chamber of Greece; Enterprises; the Association of Employees; the Association of Employers; various private enterprises, etc. These bodies offer various programmes for continuous education in which individuals may become involved.

Self-directed learning practices are mostly restricted to individual efforts towards facing temporarily short-term needs and are not a well established, continuous cultural process. Self-directed learning emphasises learning for an understanding and for an application in a more pragmatic way and is in complete variance with the dominant cultural elements. Because of the official education system, people are used to learning a specific content determined by the authorities. They are not familiar with the problem-solving educational process utilising local and international informational resources which is a basis for self-directed learning activities in the contemporary complex technological society.

The information resources (libraries, appropriate centres for distribution of information, guidance and support services) are limited, particularly in rural areas. There is no organised framework to provide information to the public in relation to the informational resources available.

There are no organised educational materials in the form of 'teaching packages' relating to various contemporary subjects, to be utilised by interested customers through self-directed learning activities. Recently, a number of efforts were made for the development of multimedia for various educational purposes. However, there is neither sufficient experience nor the know-how, while there are not appropriate information networks to be utilised for the diffusion of information in a broad sense.

A number of more highly educated people, employed mainly in public services for reasons of job security, are involved in some type of self-directed learning activities, but on the grounds of personal satisfaction. Self-directed learning is not coordinated by any public institution, although there is a Centre for 'Studies and Self-Education' which in reality offers some type of continuous training programmes.

There are no specific criteria regarding the access to different types of further education, one of which is considered to be self-directed learning. The state and each organisation of the broader public sector use their own criteria for access to continuous education activities. Enterprises in the private sector choose participants on the basis of meeting their immediate needs. The various centres for liberal studies provide further education in various fields which is not officially recognised by the state, and for which a tuition fee is required.

People living and working in the countryside generally have less access to the various forms of continuous education programmes compared to those employed in the major cities.

In general, there is no mechanism for anticipating the needs of the economy and stimulating accordingly activities for further education. In any case, the gap is widening between continuous education and the needs of the labour market, which in addition do not have a particularly large number of jobs to offer as a result of the economic recession. A large number of various types of continuous education programmes are offered, not to satisfy individual needs, but in order to utilise European Union subsidies.

The whole system of continuous education and self-directed learning in Greece is only in its infancy. Numerous initiatives have been developed in an uncoordinated way for the purpose of resolving problems and filling educational vacuums, since official education is unable to monitor the changing conditions in the labour market. The various forms of continuous education, including elementary types of self-directed learning, endeavour mainly to remedy problems that already exists. In addition, in most cases they are addressed to those groups who already have a good educational background rather than to that population with limited knowledge and skills whose competitive potential is reduced in a labour market becoming increasingly competitive with every day.

Another problem relates to the traditional organisation of the Greek production units. The necessary orientation for high-level qualitative specifications for continuous education and self-directed learning programmes according to contemporary demands is not consistent with the organisational structure and culture of Greek enterprises and public organisations.

Their features are not those required by new technologies and the current modus operandi of the market. Top management rarely becomes involved in continuous education activities, power is exerted in a particularly centralist manner and not as a result of group cooperation for exploiting knowledge and specialisation of models and skills. Power is exerted intuitively, programming is confidential and often a tool not for effective communication and exploitation of manpower potential, but for 'putting pressure' on subordinates.

Organisational systems are either non-existent or under-used. Consequently, organisation of continuous education and self-directed learning activities that fulfil high-level qualitative specifications presents many difficulties in cases in which the above characteristics predominate.

The promotion of a system of values and practices relating knowledge and learning to rapid changes, to the developmental process, to productivity as well as to the actualisation of the potential of human resources seems to be necessary in Greece.

4 Summary, Prognosis, Recommendation

Man has entered a period of considerable complexity in the modern technological society - a period that will not permit a random process of problem solving.

There is a need for research in relation to self-directed learning in Greece to conceptualise and clarify ideas in this initial stage. The research may be the basis for a general framework for policies and directions. The outcome of the research could become the basis.

Self-directed learning can be a continuous process for improving the quality of choices made by responsible citizens, on the grounds of better information and analyses upon which to base their decisions, providing exploratory experiences in the area of business, citizenship, health and industry, work experience and adjustment skills to work.

Self-directed learning involves such capabilities as rationality, depth of understanding and decision making. These capabilities must be appropriately cultivated through the basic official educational system. Self-directed learning also requires capabilities for determining a course of action, for responsibility and for focusing on a future shaped by many unforeseen or unforeseeable factors.

Data expressing the attitudes of specific populations in relation to self-directed learning are necessary for the development and actualisation of this educational practice.

The creation of a series of sectoral centres for continuous education and for facilitating self-directed learning activities is necessary. These interventions will help the improvement of the information flow to small and medium-sized enterprises with regard to the possibilities for training their staff and will provide assistance to individuals.

The policies in relation to self-directed learning and continuous training will focus on systematic and appropriate approaches promoting development and structural changes; contributing to the modernisation, transfer and dissemination of the required technology; engaging suitable personnel for playing the role of the resource persons and associating self-directed learning and continuous education with the economy and general development.

Self-directed learning and various other forms of continuous education can facilitate structural changes on a large scale and must be integrated into a framework for long-term strategy, in relation to the development of specific geographical areas and branches of the Greek economy. A large percentage of the population works in the numerous small family enterprises in the agricultural and handicraft sectors. (Approximately 30% of the Greek population is employed in the field of agriculture at complete variance with the European Union where an average of 7% of the population is involved in agricultural work.) These enterprises do not employ executives with a high level of education and have the greatest need to participate in modernisation processes, but they lack the knowledge, the information and the necessary resources. In addition, the attitudes and the value system which are part of this particular population are not compatible with the contemporary need for involvement in a continuous learning process.

The obvious need for reorientation of the labour force in more productive directions and organisational schemes can be satisfied through the development of suitable frameworks and values reinforcing appropriate self-directed learning activities. Research will also be necessary for effective decision making and planning.

Self-directed learning could also be examined as a process for preventing unemployment and as an aid for the re-entry of unemployed people into the work force.

Since most of the organisation-run continuous education programmes constitute repetitions of basic training programmes, self-directed learning could be geared more effectively to the needs of the labour market. In order for this to be achieved, it is necessary to develop an appropriate information network and to prepare labour force to utilise these networks and to adapt the basic official system. The first step of action is towards a greater awareness and understanding. This broader awareness will encourage more people to undertake self-directed learning activities.

References

Association of Greek Industries (1993). For a competitive economy: A New Approach in Industrial Policies in Greece.

Association of Teachers of Secondary Education (1994). The educational content within the framework of the new social and economic environment: 6th Educational Workshop. Athens.

Bourandas, D. (1993). New Technology, Organisational Structures and Culture: The Case of Greek Enterprises. Hellenic Centre for Productivity, EUROTECNET 1992, Conference: The Instructor as an Educator in a Constantly Changing Work Environment. Athens.

Council of Deans and Presidents of Greek Universities (1992). Greek Universities in the Europe of 2000: Decision of the Council of Deans Regarding the European Commissions Memorandum on Tertiary Education in Europe.

Federation of Greek Industries (1990). Technical Education Needs in Greek Industry. Athens.

Federation of Greek Industries (1992). Studies on the Needs of Technical Education in Greek Industries: Summary. Athens.

General Secretariat for Popular Further Education (Bergidis, D; Ntemanter, P. etc.) (1984). The Popular Further Education in Greece Evaluation of Further Education Activities. Athens.

General Secretariat for Popular Further Education (Care of Mrs. Iliou M.) (1985). Decentalization and Popular Further Education - The Contribution of the Trainer to Local Development: 3rd International Seminar in Ioanina. Athens.

Hellenic Centre for Productivity (1989). Industry and Universities - New Types of Cooperation and Communication. Athens.

Hellenic Centre for Productivity - Institute of Management (1990). The Labour Market and the Impact of the European Social Funds. Athens.

Hellenic Corporation of Business Management (1992). Educational Programs. Athens.

Iliadis, N. (1981). Industrial Arts Education in Greece as Perceived by Selected Population. (Ph.D. Thesis). USA: University of Maryland.

Iliadis, N. (1992). Labour in Modern Society and the Need for the Rational Planning of Vocational Training Programs. Periodical Technica 70. Athens.

Iliadis, N. (1992). Alternative Structures for Secondary Technical and Vocational Education. Technical Chamber of Greece. Forum Concerning Technical-Vocational Education and Training. Athens.

Iliadis, N. (1993). The New Framework of Business Operation and the Role of the Vocational Instructor. Hellenic Centre for Productivity. EUROTECNET 1992, Conference: The Instructor as an Educator in a Constantly Changing Work Environment. Athens.

Iliadis, N. (1995). Continuing Vocational Training in Greece. National Report. Athens: National Institute of Labour.

Iliou, M. (1990). Educational and Social Dynamics. Athens: Poria.

Industrial Research and Development Advisory Committee of the Commission of the European Communities (IRDAC) (1991). Skills Shortages in Europe.

Industrial Research and Development Advisory Committee of the Commission of the European Communities (IRDAC) (1991). School and Industry.

Ionian Bank (1992). The Evolution of the Internal Market in Europe and the Country of Greece. Athens.

Kioulafas, E. (1987). Description of the Greek Labour Market. Institute for Economic and Industrial Research.

Konstantinopoulos, X. (1993). Policies and Institutions for the Prevention of Unemployment in Greece, 1920-1992. Athens.

Ministry of Education - ITE (Karagianis, L.; Papatheodosiou, S. and Stavrou, S.) (1990). Further Education as a Means for Facing Long-term Unemployment in Greece. Athens.

Mouzakis, S. (1986). Greek Education 1821-1985. Athens: Gutenberg.

Negreponti-Delivani, M. (1990). Greek Economy, Society and Politics ... this Chaos. Athens: Papazisi Publishing Co.

Psacharopoulos, G. (1980). Economics and Education - Factors Determining the Demand for Post-Compulsory Education. Athens.

Psacharopoulos, G. & Paleocrassas, S. (1990). Technical, Vocational and Technological Education, Problems and Prospects as we approach 1992. Education and Profession, 3, 217-230.

Technical Chamber of Greece (1992). The Job Market for Engineers, Needs, Problems, Structure, Prospects, Research. Study and Evaluation of Continuing Training Actions Financed by the European Social Fund. Athens.

Tzekinis, X. (1988). Labour Relationships, Labour Environment and Productivity. Athens: Hellenic Centre for Productivity.

Xatzipanagiotou, I. (1984). The Evolution of the Greek Labour Market 1961-1983. Manpower Employment Organisation. Ministry of Labour.

Gerald A. Straka

Self-Directed Learning in Germany: From Instruction to Learning in the Process of Work

1. Historical Contexts of Self-Directed Learning

In German-speaking countries, self-determination, liberty, emancipation, autonomy, rational thinking and independence are important elements in the philosphy of educational theory (Klafki, 1991). This concept of education and its interpretation as 'allgemeine Bildung' which distinguishes it from 'Vocational Education' can be traced back to the 18th century. The main focus of the reflections made in this connection is an up-to-date interpretation of the concept 'allgemeine Bildung'. The consequence is that on the one hand, learning as a skill, a method or strategy etc. leads a rather shadowy existence. On the other hand, in the theory and practice of vocational training, the 'Four-Steps Method' and other stepped approaches (such as the 'Seven-Steps' or 'Rodenstock Method' (Hintermaier & Wagner, 1980)), are awarded more prestige. The philosophy of a stepped approach has a certain tradition as the famous educationalist Herbart (1806), for example, and his followers Ziller (1856) and Rein (1902) shaped the didactic discussion in Germany for a long period with their 'formal steps' ('Formalstufen').

1.1 Vocational Training after 1945 in Western Germany

It can be drawn from papers on didactic and methodology in vocational training that the 'Four-Steps Method' as 'Training Within Industry' (TWI) method was made known by the occupying forces from the USA in post-war, Germany (Hintermaier & Wagner, 1980). Its forerunner was Allen´s (1945) 'Four-Steps Method' of 'show, tell, do and check'. Allen was the head of the training programme of the Emergency Fleet Corporation of the United Shipping Board that was set up on the 12th September, 1917. This programme was established to cover the enormous requirement for qualified worker which arose for a short time after the USA entered World War I (Miller, 1987).

The same situation arose as the USA entered World War II in December 1941. "The wartime trainers suddenly needed to move vast numbers of people through orientations, attitude building and technical instruction. ... The actual training of supervisors to become job instructors was developed to classic simplicity by the Training Within Industry (TWI) Service which was established in August 1940 by the National Defense Advisory Commission. ... By the time TWI ceased operations in 1945, it had been instrumental in training 23,000 persons as instructors, and had awarded nearly two million certificates to supervisors who had gone through TWI programmes in more than 16,000 plants, services and unions" (Miller, 1987, 11f.).

1.2 The 'Four-Steps Method'

In the 'Four-Steps Method', an introductory preparation for the trainee (step no. 1: Preparation) is followed by the instructor demonstrating the training phases, central points and explanations (step no. 2: Demonstration). This stage leads to a trainee control stage (step no. 3: Comprehension), which is followed by the concluding or practice step (step no. 4: Conclusion/Practice). This exposition of the various stages of instruction shows that this form of instruction is relatively rigid and it is basically suited for the conveying of work skills for which a demonstration is sufficient for learning the job (Schelten, 1995).

Technically organised change, flexible production, job diversification, the control and maintenance of installations etc. have contributed to the loss in significance of simple manual semi-skilled jobs. The reorganization of careers in industrial metalworking (15.1.1987) and careers in industrial electronics (1.8.1987) led to the goal of 'independent planning, execution and controlling' and to training regulations being set down for the first time. This prescript meant that other forms of instruction other than the 'Four-Steps Method' are necessary. One of which is the 'Leittextmethode' ("Leittextmethode"). This is very much present in the current didactic discussion on vocational training in Germany.

1.3 The 'Leittextmethode'

The formation of the 'Leittextmethode' was not realized in one single step. Rather it was the result of a long process of development which was nudged on by practice itself. It all began in the middle of the 1970s as the project method for metal working was developed further in the Daimler Benz AG´s Gaggenau plant. Within the framework of the project training, it came to light that the trainees learnt at a different pace and carried out different tasks at different points in time. It was no longer appropriate to instruct all the trainees at the same time with the same material. The trainees had to instruct themselves at the appropriate point in time. For this purpose, the instructors wrote down their instructions as a tape show on which the trainees could fall back. In order to guarantee that the trainees really had understood the material they had to answer control questions. These were checked over, corrected and, if necessary, supplemented by the instructors before the trainees could carry out the corresponding practical task. In this respect, these control questions were the forerunner of the 'Leittextmethode'. (Rottluff, 1992).

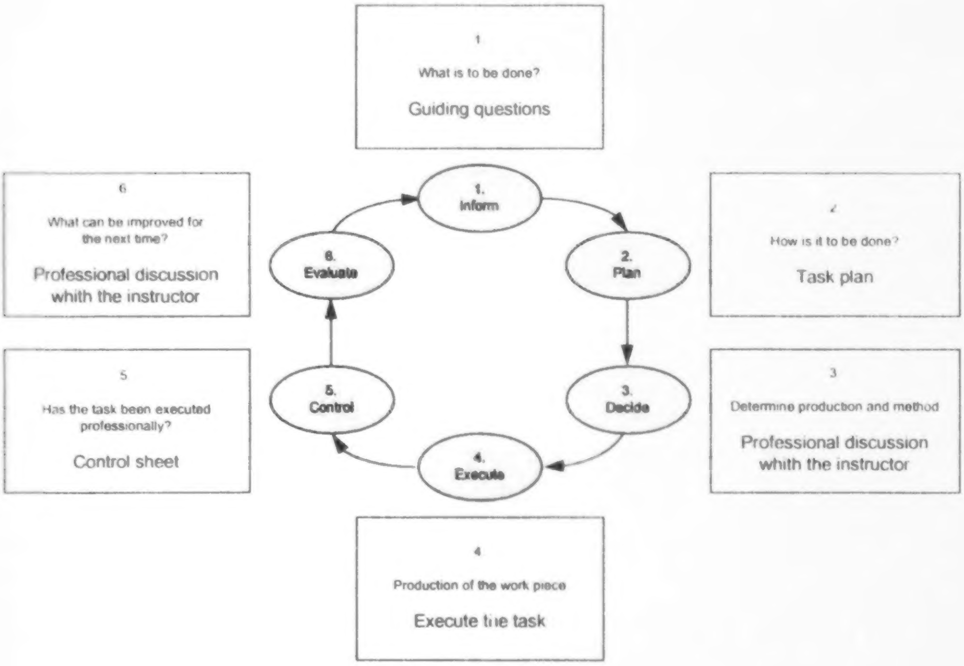
These didactic considerations were taken up and developed further by the Ford plants in Cologne and the steelworks in Salzgitter. The Voith works in Heidenheim, German Railways, Hoesch Steel in Dortmund and other companies followed (Rottluff, 1992). The Federal Institute for Vocational Education (Bundesinstitut für Berufsbildung) supported the development and dissemination of this approach with further experiments. On the 16th June, 1998 the concept and practice of the 'Leittextmethode' were presented to the professional world (Bundesinstitut für Berufsbildung, 1988). In the meantime, the 'Leittextmethode' had spread far beyond career training in industrial metalworking and electronics and is now an established method in vocational training in Germany (cf. Pätzold, 1993; Kaiser & Kamisky, 1994; Friede, 1988, Bauer, 1989).

However, the dissemination of this approach has also led to the fact that, in the meantime, different understandings and realities exist, and in the real sense of the word there is no one particular 'Leittextmethode'. However, in spite of all the differences, the further developments can basically be traced back to Pampus (1987), Bockelbrink, Jungnickel & Koch (1988) and Koch & Selka (1991) who showed that the model of complete action is a 'brand' of the 'Leittextmethode' (Bockelbrink, Jungnickel & Koch, 1988).

1.3.1 The Model of 'Complete Action'

With reference to Hacker (1978) and Volpert (1983), 'complete action' constitutes a theoretical central element in explaining the 'Leittextmethode' (Koch & Selka, 1991, 41f.). "Those actions which are described as complete actions not only include the execution of a task but also the planning and control of this task" (Bockelbrink, Jungnickel & Koch, 1988, 58). This complete action is depicted in the diagram below as a circle of rules which include the following six phases: inform, plan, decide, execute, control and evaluate. Specific questions are formulated to each of these six phases as they are shown in the following simplified diagram taken from Pampus (1987, 15) and Bockelbrink, Jungnickel & Koch (1988, 59):

Fig. 1: Elements of the 'Leittextmethode' and their structure


1
What is to be done?
Guiding questions
6
What can be improved for the next time?
Professional discussion whith the instructor
1. Inform
2. Plan
6. Evaluate
2
How is it to be done?
Task plan
5
Has the task been executed professionally?
Control sheet
5. Control
3. Decide
3
Determine production and method
Professional discussion whith the instructor
4. Execute
4
Production of the work piece
Execute the task

There are also voices which criticize the 'Leittextmethode' (eg. DFG-Deutsche Forschungsgemeinschaft, 1990). Koch, as one of the method's founders, responded to these critics by saying that "the psychology of learning stood in the foreground" (Koch, 1992, 31). Its validity shall now be examined in the following section taking Roth's learning steps as an example.

1.3.2 Roth's Six Learning Steps

In Roth's opinion, an educational theory which is pedagogically orientated has to set itself the task "of discovering the links which can be controlled within the learning process, showing them to the instructor and putting them at his dis-

BEST COPY AVAILABLE

posal" (Roth 1973, 179). With this in mind, he reviewed the available findings in educational theory which for the most part came from the USA and which had been published before 1957 (year of publication of Roth's first edition). He summarized these findings in three types of learning: Incidental learning, intentional learning and learning under the condition of instruction (originally: learning through teacher's impetus). At the same time, Roth took the view that six learning steps are common to these different types of learning, explaining that "summarized in a few key words, we can maintain that the following are all included in the process of learning: an impetus (motivation step), a resisting object as a task in a learning situation (difficulty step), an insight into a suitable method of working and solving the task (solution step), an action which verifies this method as the right one (perform and execute step), a reinforcement of what has been learnt (remembering and practising step) and a provision of what has been learnt for similar tasks and situations in the future through confirming and retaining once again what has been learnt (step of provision, application and integration of what has been learnt)" (Roth, 1973, 226).

1.3.3 Comparison between Complete Action and Roth's Learning Steps

In order to compare the two approaches the phases are juxtaposed as follows:

Complete Action	**Learning Steps**
1. Inform	1. Motivate
2. Plan	2. Difficulity
3. Decide	3. Solution
4. Execute	4. Perform and execute
5. Control	5. Remember and Practice
6. Evaluate	6. Provision, application and integration of what has been learnt

The differentiation into six phases is common to both models. However, differences can already be seen in the first phases. Roth begins with 'motivation', the complete action model begins with 'inform'. These differences are a result of the different perspectives of the two approaches. Roth's model focuses on the teacher who wishes to encourage the learner. In this context, the pupil's motivation to learn plays, as research and experience show, an important role (Straka et al., 1996). Action forms the basis of the 'Leittextmethode' as in Hacker's and Volpert's deliberations on action theory. As they put it, for example: "we understand 'action' as the smallest psychological entity of an activity which is controlled by will. The definition of this action is effected through the conscious aim which depicts the anticipation of the result connected with a motive" (Hacker, 1978, 62f.) and the "... (work) activity is a functional entitiy comprised of motivational, volitive, cognitive (perceptive, mnestic, intellectual) and motoric events" (Hacker, 1978, 58). Seen under this perspective, motivation is a fixed component of an action and in this respect it is only logically consistent when 'motivation' is not listed as an independant phase of an action. However, it must be taken into consideration that at least gradual differences can be seen in motivation since the motivation for action must not necessarily include the motivation to learn from this action. Motivation for an action can consist in completing a complex task simply, in so far as the actor has the necessary knowledge and skills at his disposal. "If the action goes off smoothly, .. then no learning really takes place apart from adapting present abilities to a new situation" (Roth, 1973, 223). If the task is new and the necessary knowledge and skills are lacking, then a problem exists. In this case, motivation can be limited to solving the problem and going consciously, or rather, uncounsciously through the phases of complete action and nothing else. In this case, the constituent aim of an action includes not the intention to learn from solving a problem.

Roth's step 'difficulty' could be surmounted by the activities in the phases 'inform' and 'plan'. Common features can also be seen in phase three. Roth calls this phase 'solution' and writes: "A new way of solving a problem in order to complete an action or solve a task can be discovered through adaption, trying or insight" and "the teacher shows how to solve the problem or he asks to find the way oneself" (Roth, 1973, 224). For the third phase of a complete action we found as follows: "In this step, the planning suggestions should be discussed with the instructor in in-depth discussions. The advantages and disadvantages in the different plan of action should be discussed. Above all, mistakes have to be recognized and corrected before the decision is made which method of production is to be entered upon, which tools or method are to be used and which interim controls are to take place. The permission to deal with the task is to be given by the instructor in order to avoid expensive mistakes in production" (Pampus, 1987, 16).

Roth's 'perform and execute' could also comprise the phases 'execute', 'control' and 'evaluate' in the complete action concept. 'Evaluate' could result in what has to be 'remembered and practised'. This aspect, however, is not explicitly mentioned in the complete action concept and the aspects 'provision, application and integration of what has been learnt' could also appear during 'evaluation' as one of the objectives. The fundamental difference between the perspectives in acting and learning can be seen clearly here. Learning is either a by-product of acting or it is implied that action inevitably leads to learning. From the perspective of learning theory, however, action is a necessary but by no means a sufficient condition (Straka & Macke, 1979). The action theorist Volpert (1985) also confirms this point of view thus: ".. but the essential characteristics of learning cannot be derived from a pure model of action. They are supplementary, ..." (Volpert, 1985, 111). This 'supplement' is, according to our hypothesis - listed as 'remember and practice' or rather 'provision, application and integration of what has been learnt' by Roth. To this extent, the 'Leittextmethode' with its basis on the theory of action is also based on a necessary but by no means sufficient condition for learning which means that the when discussing the 'Leittextmethode', we cannot mean a 'learning-teaching theory'.

1.4 Other Threads in the Discussion

Other considerations have also been included into the more recent theoretical discussion and practical exposition of self-directed learning in vocational training in Germany. Among others are: learning-teaching theoretical approaches, studies on the significance of learning in practical non-instructional settings and measures or experiments which deal with the initiation and fostering of autodidactic learning above and beyond the 'Leittextmethode'.

1.4.1 Learning-Teaching-Theoretical Roots

At the end of the seventies and at the beginning of the eighties, the academic discussion on self-directed learning reach its first climax: among which are the following examples:

- The reader on self-directed learning edited by Neber, Wagner and Einsiedler (1978) which, however, principally refers to general education, as well as a further fundamental article on self-directed learning (Neber, 1982).

- Weltner's approach (1978) to 'autonomous learning' which, however, deals mainly with learning in higher education.
- Stiefel's thoughts (1978) on autonomous learning which adapted Tough's (1967, 1971) and Knowles (1975) concepts on the further education of managers.
- Tietgen's concept (1980) of 'participant orientation' which had a large resonance in adult education in Germany.
- The issue of the periodical 'Unterrichtswissenschaft' which was edited by Mandl and Weinert in 1982 with the topic 'Self-Directed Learning' in which an attempt was made to describe this form of learning (Weinert, 1982) and in which different measures for promoting it were presented (Mandl & Fischer, 1982; Wang, 1982).

After these publications appeared, all was calm again in self-directed learning which, however, does not mean that this form of learning under other names was not pursued elsewhere.

1.4.2 Studies on the Significance of Self-Directed Learning

The studies carried out by the Federal Institute for Vocational Training can be seen within this context. They attempt to determine those actitivities which qualified employees undertake after having finished their apprenticeship or primary vocational training in order to obtain further qualifications. One of the main results is that learning from colleagues and autodidactic learning at work is one of the most important forms of further qualification for young professional employees in their first years of employment after training (Kloas, 1988). With employees in industry, wholesale and foreign trade as well as banks these studies were continued (Kloas & Neumann, 1991; Hupfer & Puhlmann, 1991; Neumann & Spree, 1991). These studies confirm that autodidactic learning at work as well as educational support from colleagues or superiors represent the most important forms of further education after completing primary vocational training (Kloas & Neumann, 1991).

Studies on self-organized job-related learning must also be seen in this context. The main result was that according to their own estimation about a third of the office employees interviewed replied that their present competence within their chosen career was acquired through self-organized learning. From the fifteen forms of self-organized learning, the following were named in this order: first reflection, followed by asking colleagues, purposeful trials, books at the workplace, etc. (Straka, Stöckl & Kleinmann, 1992; Straka, Kleinmann & Stöckl, 1994).

1.4.2 Projects with an Experimental Character

Finally, the extensive representative surveys within the framework of FORCE (Bundesinstitut für Berufsbildung, 1995) as well as the Report System Further Education should be mentioned. This report carries out surveys every three years on how Germans between the ages of 19 and 64 behave as far as further education is concerned. The report which was published in 1996 with the first results from the survey in 1994 showed that 'self-organized learning at the workplace' or 'informal vocational further education' were stated by 52% of those interviewed. Furthermore, 27% of those interwieved named this form of further education as the most important form of obtaining knowledge for the professional activity of employees in Germany. This rate reaches 33% when new machines or systems are introduced (Kuwan, 1996b). In keeping with the trend, these proportions tally with those of the Report System Further Education no. V from 1991 (Kuwan, 1996a).

Literature on human resource development and vocational training report on measures and experiments which are related to self-direction in learning in the in the broadest sense of the word. The following list, which is by no means complete, is for further reference:

- 'Vom Plan zum Markt - Die Qualifizierungsstrategie der Dresdner Bank' (From the Planned Economy to the Market Economy - the Dresdener Bank's Qualification Strategies) (Burski, 1993)
- 'Selbstlern-Medien: Den Lernprozeß aktiv konstruieren' (Autodidactic Learning Aids: Actively Constructing the Process of Learning) (Kittelberger, 1993)
- 'Wenn Bildung Spaß macht: Das BMW-Selbstlernzentrum' (When Training is fun: The BMW's Autodidactic Learning Center) (Kvech, 1990)
- 'Mitarbeiterschulung durch selbstgesteuertes Lernen' (Employee Training Schemes and Self-Directed Learning) (Reichl, 1990)

In addition, further results can be found in articles and reports from empirical accompaniment to model experiments and practical projects:

- Forschungs- und Entwicklungsprojekt 'Lernen von ArbeitnehmerInnen in der zweiten Lebenshälfte durch selbstgesteuertes, individualisiertes Lösen komplexer arbeitsplatzbezogener Problemstellungen mittels EDV-Software (FESILI 2000)' (The Research and Development Project Training for Older Employees through self-directed and individualized solutions of complex and work-related problems using DP-Software) (Straka, Kleinmann & Wilckhaus 1994)
- Technische Zeichner und CAD (Computer Aided Design) (TECA) (Technical Drawers and Computer Aided Design) (Stöckl & Straka, 1995)
- Selbstgesteuerte Weiterbildung im Handwerk (SWING) (Self-directed Further Training in Manual and Craft Trades) (Twardy, 1992)
- Kontinuierliche und kooperative Qualifizierung und Selbstqualifizierung von Ausbildern der Volkswagen AG (KOKOS) (Continuous and co-operative Qualification and Auto-Qualification for Instructors in the Volkswagen Ltd.) (Over, 1991)
- Projekt- und transferorientierte Ausbildung (PETRA) (Project and Transfer orientated Education) (Klein, 1990)
- Der Arbeitsplatz als Lernfeld: Ein innovatives Weiterbildungskonzept bei der Bayer AG (Work as a Field of Education: An Innovative Concept for Further Training in the Bayer Ltd.) (Herz, Bauer, Brater & Vossen. 1990)
- Autonomes Selbstgesteuertes Lernen (Autonomous Self-Directed Learning) (Deitering, Kurtz & Geilhardt, 1991)
- Impulse zum Weiterlernen: Einstieg ins selbstgesteuerte Lernen (Ideas for Continued Learning: Introduction to Self-Directed Learning) (Beitinger, Mandl & Puchert, 1994)
- CBT-Umgebungen als Unterstützung von Selbstgesteuertem Lernen (Computer-based Training Environments as a Support for Self-Directed Learning) (Geyken & Mandl, 1993)

A good example is the trial test 'Autonomes Selbstgesteuertes Lernen (ASL)' (Deitering, Kurtz & Geilhardt, 1991) which gives a brief account of autonomous self-directed learning in training schemes for insurance agents. Numerous methods and instruments such as educational lectures, teaching projects and the 'Leittextmethode', partner learning and group learning, self-evaluation, outside evaluation and group evaluation, coaching, educational resources' pool and trainees' groups were all employed in order to support this kind of learning.

The high level of acceptance of autonomous self-directed learning among the trainees was one of the most striking results. However, the desired success of these measures was impaired:

- by the lack of a training environment in the company;
- by the difficulties the individual trainees had with the large scope of action they had;
- by the training treaty which the trainees found artificial and complicated;
- by the problems which resulted from the short-term organization of the educational resources' pool, and
- by the instructors reservedness or even reluctance (Deitering, Kurtz & Geilhardt, 1991).

Even if these reports tend to present success stories, critical views on autodidactic learning are an exception (Heid, 1991; Reischmann, in print). Although there are hardly any evaluations which are based on the metholodical standards of empirical research, we can summarize that:

- Supporting self-directed learning is, on the whole possible. However, learners with above-average qualifications profit more from self-directed learning than learners with below-average qualifications (Dubs, 1993; Friedrich & Mandl, 1995; Straka, Kleinmann & Will, 1994).
- Training which employs isolated strategies or educational methods seldom leads to a fundamental alignment to self-directed learning (cf. Friedrich & Mandl, 1995 for a summary).
- Room for scope which is objectively available is a necessary condition for self-directed learning, but it is by no means a sufficient condition for practising self-directed learning. If and how a learner uses this scope plays a more decisive role.

2 Self-Direction in Learning since 1990

The discussion on self-directed learning in the nineties has, once again, set off on a broad scale. The issue of the periodical Unterrichtswissenchaft edited by Prenzel with the topic 'autodidactical learning', Hofer and Niegemann's article 'interactive media in company training' (Hofer & Niegemann, 1990), Simon's framework model on autodictactic learning (1992), Deitering's monography on self-directed learning (1995) and the handbook 'Selbstorganisiertes Lernen' (self-organized learning) (Greif & Kurtz, 1996) should be mentioned here. Theoretical basics, central topics and special features, techniques and tools as well as concepts for everyday practice and examples for application which can be connected with self-directed learning in the broadest meaning of the term are all described in Greif and Kurtz's handbook (cf. the review published by Straka & Brede, 1996).

Although self-directed learning is, in Germany, being discussed and practised on a broad front since the beginning of the nineties, the most differing concepts are dealt with under this umbrella. One example is the workshop 'self-organized learning' which took place at the Second Forum of the Berufsbildungsforschungs-Netz (Vocational Training Research Net) in Berlin in September 1995. One participant summarized at the end of a discussion on the topic of 'self-organized learning' which went on for two days that 'he is still confused, but it is a high level confusion' (Straka, 1996, 57). As far as the measures for supporting self-directed learning are concerned, they extend from the 'Leittextmethode' to the provision of educational strategies to 'criteria-lead reflexion on individual action and learning with and without instruction' (Straka, 1995).

2.1 The German Research Council's Programme 'Teaching-and-Learning-Processes in Primary Commercial Education'

Deficiencies in theoretical and empirical aspects in vocational education caused the German Research Council's (Deutsche Forschungsgemeinschaft) to set up the programme 'Teaching-Learning-Processes in Primary Commercial Education' (1994-1999). Seven questions which refer to self-directed learning are investigated in 11 reserch projects: 'Instructional help-systems for interactive self-regulated learning processes and development of a new method for knowledge assessment' (Hofer et al, 1996); 'Learning with interest and self-determination in vocational education' (Prenzel et al, 1996), 'Motivated Self-Directed Learning for primary vocational and business training - developing and validating a two-shells-model' (Straka et al, 1996a), 'Self-organized learning'; 'Complex learning in basic business training: cognitive and motivational aspects' (Stark et al, in print[10]), 'Learning motivation in primary vocational education' (Wild & Krapp, 1996), 'Motivation and learning' (Hardt et al., 1996).

2.2 A Concept for Self-Directed Learning

The project 'Motivated Self-Directed Learning for primary vocational and business training - developing and validating a two-shells-model' is introduced as an example (Straka et al, 1996a; Nenniger et al, 1996). The project assumes that learning is a dynamic interplay of interest, motivation, knowledge and skill. According to this thesis, a person who learns in a motivated, self-directed manner is someone who has a corresponding basic knowledge and is willing and able to plan, organize, apply, control and evaluate her/his learning process independently and self-responsibly, be it in co-operation with others or as an individual.

These ideas have been brought together to form a model for motivated, self-directed learning whose elements form theoretical constructs originally conceived on the basis of results and traditions of adjacent research fields. These include, among others: studies in the theories of interest (Deci, 1975; Prenzel, 1986), performance motivation (Heckhausen & Rheinberg, 1980), attribution (Weiner, 1986), learning (Straka & Macke, 1979, Straka et al., 1996) and studies of action control (Brown, 1984) - and were then integrated into superordinate concepts.

In this model the two correlated diffuse shells are depicted separately for analytical purposes. With them the corresponding processes are described which can form the components of an action or learning episode. From the perspective of the general behaviourial model, such episodes are embedded in the external conditions (e.g., structure of tasks, availability of resources, social climate at the workplace) and internal conditions (e.g., motives, capabilities, skills, declarative and procedural knowledge). (cf. Fig. 2).

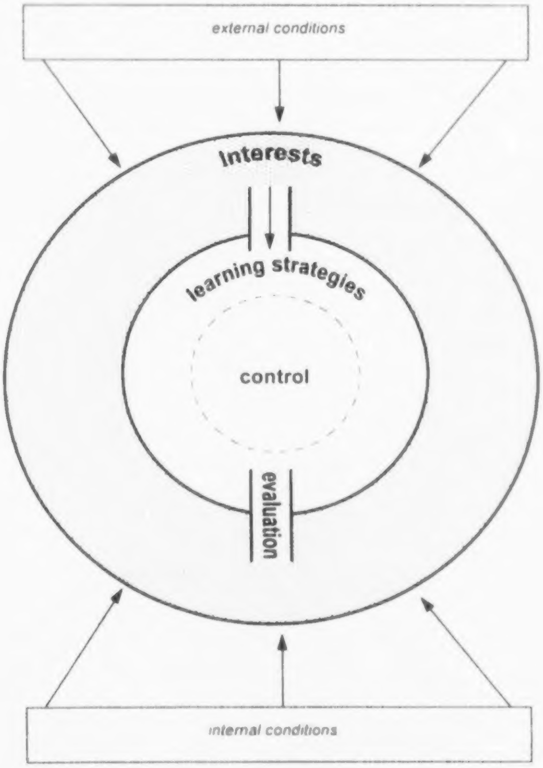
---

[10] This project joined the German Research Council's programme in 1996.

The model itself contains the concept 'interest' in its outer shell which the constructs contentual interest and procedural interest are assigned to (Straka & Nenniger, 1995). The concepts 'stragegies' and 'control' are located in the inner shell. The concept 'strategies' comprises the constructs resource management, sequencing and implementation, whereas the concepts cognitive control, metacognitive control and motivational control are assigned to the concept 'control'. The diagnostic and attributive constructs are constituted by the concept 'evaluation'.

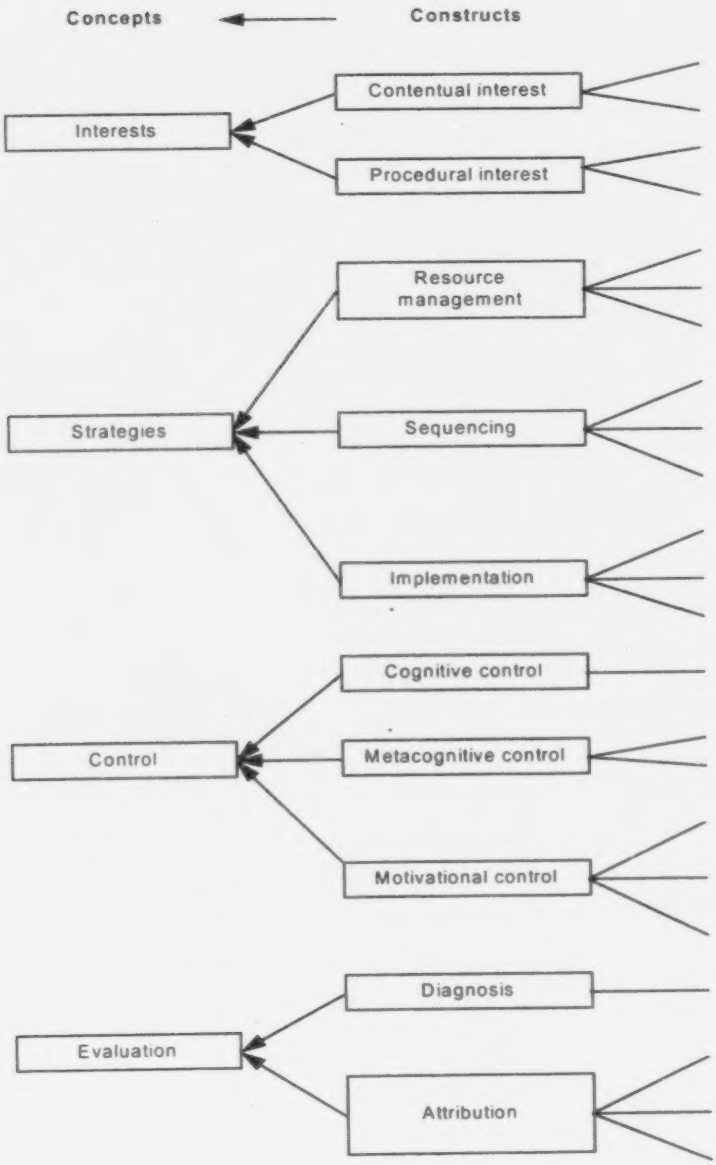
Thus, motivated self-directed learning can be described with the aid of the four concepts 'interests', 'strategies', 'control' and 'evaluation', to which specific constructs are assigned (cf. Fig. 3).

Fig. 2: Two-shells-model of motivated Self-Directed Learning



BEST COPY AVAILABLE

Fig. 3: Concepts and constructs



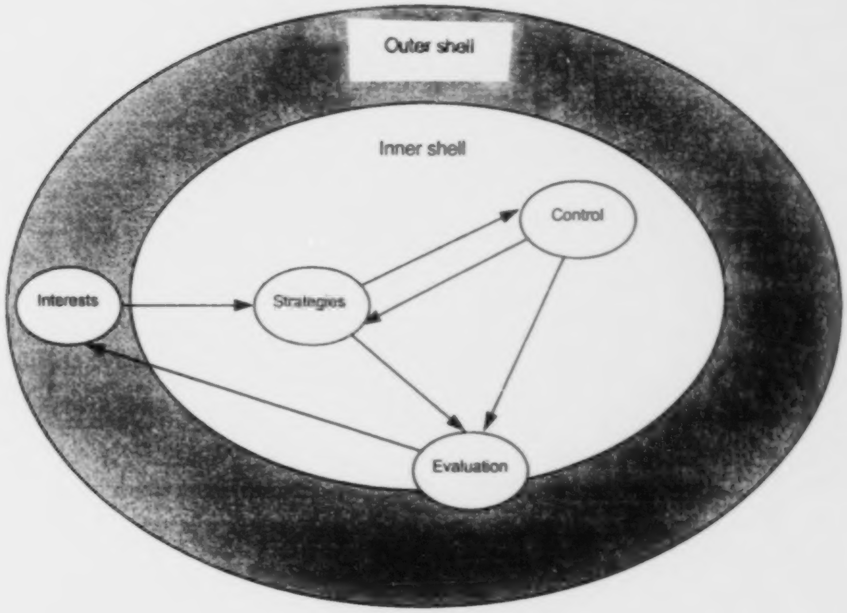
As the indicating arrows show, the constructs were made operational by means of items which form components of dimensional scales (cf. Straka et al. 1996).

These abstract and conceptual remarks are to be illustrated by means of the following example: imagine a person with a certain interest in contents and procedure has decided to aquire a command of the word-processing programme largely on his/her own. Firstly, he/she plans her further steps. He/She keeps half an hour a day free (sequencing (time planning): high) and works in a concentrated manner through several fundamental chapters of the handbook at the staff's disposal (cognitive control: high). He/She sets herself the goal of at least learning the software (motivational control). He/She thus writes down the main commands and shortcuts and makes a mental note of them (implementation: high). When difficulties come up, he/she wonders if he/she should ask another colleague for help, but finally decides against it (resource mangement: low). When the person reflects on his/her learning progress after a good two weeks, he/she arrives at the subjective assessment that in the meanwhile, he/she masters some of the fundamentals of the word-processing programme. On the whole, he/she views the learning process as satisfactory (diagnosis: medium). Above all, he/she attributes this to the fact that he/she has directed this process largely on his/her own (attribution: personal).

On the basis of the aforementioned concepts discussed in the preceding sections, the following relations in a two-shell model for motivated, self-directed learning can be postulated: (cf. Fig. 4).

The relations on the concept level of this model may be hypothized: 'Interests' in the outer shell effects the interacting concepts 'strategies' and 'action control' in the inner shell. These concepts, in turn, have an effect on the concept 'evaluation'. The latter functions as the connecting link between the inner and outer shells by its effect on certain 'interests' in the outer shell of the model. Primary empirical results on the basis of samples of trainees for business administration and controlling tend to confirm the two-shell model postulated in figure 3 (Straka et al., 1996; Nenniger et al., 1996).

Fig. 4: Postulated two-shell model of motivated, self-directed learning



3 Towards Learning in the Process of Work

Technical and organisational change, flexible and global production mean that a corresponding continuous further qualification of the work-force is more essential than ever. Institutionalised and instructional training does not seem to cover the growing demand. In this respect, it is not surprising when high expectations are placed on-the-job training in vocational training and further education. The results of empirical surveys which have already been mentioned speak in favour of this point of view. These surveys indicate that learning beyond instruction is much more important than was previously supposed. The issue also has to be seen from the point of view of human resources management and in this context with working conditions in connection with the willingness and ability for self-directed learning in on-the-job learning as well as personal prerequisites.

These working conditions or external conditions in the notion of educational theory vary from job to job. Ever since Hawthorne, we know that these are not the 'objective' but individually perceived working conditions which influence actions and learning. Therefore, working conditions could be regarded from a constructivistic point of view. With reference to Deci & Ryan (1985), three central aspects which may influence motivation and action are:

1. The degree of experienced autonomy. An employee feels autonomous when he/she has the impression that he/she has scope for action or can carry out his/her task according to his/her own plans.

2. The degree of experienced competence. The employee is aware of his/her competence as soon as he/she has the impression that he/she can carry out his/her tasks expertly, successfully and effectively.

3. The degree of experienced social integration. An employee feels socially integrated at work when his/her job is recognised by superiors and colleagues and the employee associates him/herself with the corporate identity.

Pilot studies of the research group 'Learning, Organized and Self-Directed' (LOS) indicate that these three experiences have a distinct impact on the willingness of business employees for self-directed learning which is directly connected to their task (Kleinmann & Straka, 1996, Straka, 1996). Within the framework of another pilot study, significant relations between experienced autonomy, competence and social integration could be established on the basis of self-ratings given by business employees. Significant relations could also be ascertained for an interest in self-directed learning as well as competences in strategy, control and evaluation in the two-shell model under working conditions (Straka, in print). Without wanting to over-exaggerate the importance of these findings, they do, however, indicate that the readiness and ability for self-directed learning in an on-the-job learning process does seem to be connected with specific qualities experienced at work. Should these findings be confirmed in varied analyses with other and larger samples, then varied working conditions for self-directed learning in an on-the-job learning process could be specified as a component of a made-to-measure personal and organisational development for companies for the coming millennium.

References

Allen, Ch. R. (1945). The instructor, the man and the job. Chicago: Lippincott.

Bauer, B. (1989). Leittextmethode als Metatheorie zur Strukturierung von kognitiven Prozessen. Perspektiven im Bereich der EDV-Schulung mit Leittexten. Zeitschrift für Berufs- und Wirtschaftspädagogik 85, 5, 449-457.

Beitinger, G., Mandl, H. & Puchert, C. (1994). Konzeption und Evaluation des Medienbausteins 'Impulse zum Weiterlernen'. Unterrichtswissenschaft 22, 1, 56-74.

Bockelbrink, K.-H., Jungnickel, H. & Koch, J. (1988). Leittexte in der betrieblichen Berufsausbildung. In Bundesinstitut für Berufsbildung (Ed.), Leittexte in der Ausbildungspraxis. Berlin: Bundesinstitut für Berufsbildung.

Brown, A.L. (1984). Metakognition, 'Handlungskontrolle', Selbststeuerung und andere noch geheimnisvollere Mechanismen. In F.E. Weinert & R.H. Kluwe (eds.), Metakognition, Motivation und Lernen (60-108). Stuttgart: Kohlhammer.

Bundesinstitut für Berufsbildung (1988). Info-Markt. In Bundesinstitut für Berufsbildung (Ed.), Leittexte in der Ausbildungspraxis. Berlin: Bundesinstitut für Berufsbildung.

Bundesinstitut für Berufsbildung (Ed.) (1995). Berufliche Weiterbildung in Deutschland - Haupterhebung. Berlin: Bundesinstitut für Berufsbildung.

Burski, H.-J. (1993). Vom Plan zum Markt - Die Qualifizierungsstrategie der Dresdner Bank. Personal, 1, 15-17.

Caffarella, R.S. & O´Donnell, J.M. (1987). Self-Directed Adult Learning: A critical paradigm revisited. Adult Education Quarterly 37, 4, 199-211.

Deci, E.L. & Ryan, R.M. (1985). Intrinsic motivation and self-determination in human behaviour. New York: Plenum Press.

Deci, E.L. (1975). Intrinsic motivation. New York: Plenum Press.

Deitering, F.G. (1995). Selbstgesteuertes Lernen. Göttingen: Verlag für Angewandte Psychologie.

Deitering, F.G., Kurtz, H.-J. & Geilhardt, T. (1991). Autonomes Selbstgesteuertes Lernen (ASL). Zeitschrift für Personalforschung, 3, 239-258.

DFG (Deutsche Forschungsgemeinschaft) (1990). Berufsbildungsforschung an den Hochschulen der Bundesrepublik Deutschland. Weinheim: VCH, Acta humaniara.

Dubs, R. (1993). Selbständiges (eigenständiges oder selbstgeleitetes) Lernen: Liegt darin die Zukunft? Zeitschrift für Berufs- und Wirtschaftspädagogik 89, 2, 113-117.

Friede, C. (Ed.) (1988). Neue Wege der betrieblichen Ausbildung. Heidelberg: Sauer.

Friedrich, H.F. & Mandl, H. (1995). Analyse und Förderung selbstgesteuerten Lernens. Tübingen: Deutsches Institut für Fernstudienforschung an der Universität Tübingen (DIFF).

Geyken, A. & Mandl, H. (1993). Unterstützung des selbstgesteuerten Lernens in einer Tele-CBT-Umgebung (Forschungsbericht Nr. 18). München: Ludwig-Maximilians-Universität: Institut für Empirische Pädagogik und Pädagogische Psychologie.

Greif, S. & Kurtz, H.-J. (eds.) (1996). Handbuch Selbstorganisiertes Lernen. Göttingen: Verlag für Angewandte Psychologie.

Hacker, W. (1978). Allgemeine Arbeits- und Ingenieurpsychologie. Bern: Huber.

Hardt, U. (1996). Untersuchungen zu Motivierungspotential und Lernmotivation in der kaufmännischen Erstausbildung. Zeitschrift für Berufs- und Wirtschaftspädagogik, Beiheft 13.

Heckhausen, H. & Rheinberg, F. (1980): Lernmotivation im Unterricht, erneut betrachtet. Unterrichtswissenschaft, 8, 7-47.

Heid, H. (1991). Erziehungsziel 'Selbständigkeit'. Zeitschrift für Berufs- und Wirtschaftspädagogik 87, 4, 267-269.

Herbart, J. (1806). Allgemeine Pädagogik aus dem Zweck der Erziehung abgeleitet. Göttingen: Roewer.

Herz, G., Bauer, H.G., Brater, M. & Vossen, K. (1990). Der Arbeitsplatz als Lernfeld: Ein innovatives Weiterbildungskonzept. Berufsbildung in Wissenschaft und Praxis, 3, 10-14.

Hintermaier, R. & Wagner, F. (1980). Grundbegriffe der Berufs- und Arbeitspädagogik: Die Rodenstock-Methode. Grafenau / Württ.: Expert- Verlag.

Hofer, M. & Niegemann, H.M. (1990). Selbstgesteuertes Lernen mit interaktiven Medien in der betrieblichen Bildung. Medienpsychologie 2, 4, 258-274.

Hofer, M. et al. (1996). Pädagogische Hilfen für interaktive selbstgesteuerte Lernprozesse und Konstruktion eines neuen Verfahrens zur Wissensdiagnose. In K. Beck & H. Heid (eds.), Lehr-Lern-Prozesse in der kaufmännischen Erstausbildung. Zeitschrift für Berufs- und Wirtschaftspädagogik, Beiheft 13. 53-67.

Hupfer, B. & Puhlmann, A. (1991). Groß- und Außenhandelsleute im Beruf. Tätigkeitsmerkmale und berufliche Qualifizierung nach Abschluß der Ausbildung. Berlin: Bundesinstitut für Berufsbildung.

Kaiser, F.-J. & Kamiski, H. (1994). Methodik des Ökonomie-Unterrichts: Grundlagen eines handlungsorientierten Lernkonzepts mit Beispielen. Bad Heilbrunn: Klinkhardt.

Kittelberger, R. (1993). Selbstlern-Medien: Den Lernprozeß aktiv konstruieren. Wirtschaft & Weiterbildung, 1, 44-46.

Klafki, W. (1991). Neue Studien zur Bildungstheorie und Didaktik. Weinheim / Basel: Beltz.

Klein, U. (Ed.) (1990). PETRA. Projekt- und transferorientierte Ausbildung. München: Siemens AG.

Kleinmann, M. & Straka, G.A. (1997). Selbstlernbereitschaft und erlebte Arbeitsplatzbedingungen von Beschäftigten in kaufmännisch-verwaltenden Berufen. In K. Beck & P. Sloane (eds.), Tagungsband zur Herbsttagung der Kommission für Berufs- und Wirtschaftspädagogik der DGfE (in press).

Kloas, P.-W. & Neumann, K.-H. (1991). Industriekaufleute im Beruf. Tätigkeitsmerkmale und berufliche Qualifizierung nach Abschluß der Ausbildung. Berlin: Bundesinstitut für Berufsbildung.

Kloas, P.-W. (1988). Lernen nach der Lehre: Die ersten Berufsjahre als Qualifizierungsphase. Berlin: Bundesinstitut für Berufsbildung.

Knowles, M.S. (1975). Self-Directed Learning. A guide for learners and teachers. Chicago: Follet.

Koch, J. & Selka, R. (1991). Leittexte - ein Weg zu selbständigem Lernen. Berlin / Bonn: Bundesinstitut für Berufsbildung.

Koch, J. (1992). Ansichten, Einsichten und Mißverständnisse in der Ausbildung mit Leittexten. Berufsbildung in Wissenschaft und Praxis 21, 3, 29-32.

Kuwan, H. (1996a). Selbstorganisiertes Lernen im Prozeß der Arbeit. In P. Diepold (Ed.), Berufliche Aus- und Weiterbildung: Konvergenzen/Divergenzen, neue Anforderungen/alte Strukturen (89-93). Nürnberg: Institut für Arbeitsmarkt- und Berufsforschung der Bundesanstalt für Arbeit (BeitrAB 195).

Kuwan, H. (1996b). Berichtssystem Weiterbildung VI. Erste Ergebnisse der Repräsentativbefragung zur Weiterbildungssituation in den alten und neuen Bundesländern. Bonn: Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie.

Kvech, C. (1990). Wenn Bildung Spaß macht: Das BMW-Selbstlernzentrum. Personalwirtschaft, 4, 25-26.

Mandl, H. & Fischer, P.M. (1982). Wissenschaftliche Ansätze zum Aufbau und zur Förderung selbstgesteuerten Lernens. Unterrichtswissenschaft, 2, 111-128.

Miller, V.A. (1987). The History of Training. In R. Craig (Ed.), Training and Development Handbook. New York: McGrav-Hill.

Neber, H. (1982). Selbstgesteuertes Lernen. In B. Treiber & F.E. Weinert (eds.), Lehr-Lern-Forschung (89-112). München: Urban und Schwarzenberg.

Neber, H., Wagner, A.D. & Einsiedler, W. (1978). Selbstgesteuertes Lernen. Weinheim/Basel: Beltz.

Nenniger, P., Straka, G.A., Spevacek, G. & Wosnitza, M. (1996). Die Bedeutung motivationaler Einflußfaktoren für selbstgesteuertes Lernen. Unterrichtswissenschaft, 3, 250-266.

Neumann, K.-H. & Spree, B. (1991). Bankkaufleute im Beruf. Tätigkeitsmerkmale und berufliche Qualifizierung nach Abschluß der Ausbildung. Berlin: Bundesinstitut für Berufsbildung.

Over, D. (1991). Das Qualifizierungskonzept für Ausbilder bei der Volkswagen AG. In P. Meyer-Dohm & P. Schneider (eds.), Berufliche Bildung im lernenden Unternehmen: Neue Wege zur beruflichen Qualifizierung (143-156). Stuttgart: Klett.

Pampus, K. (1987). Ansätze zur Weiterentwicklung betrieblicher Ausbildungsmethoden. Berufsbildung in Wissenschaft und Praxis, 2, 48-51.

Pätzold, G. (1993). Lehrmethoden in der beruflichen Bildung. Heidelberg: Sauer.

Prenzel, M. (1986). Die Wirkungsweise von Interessen. Köln: Westdeutscher Verlag.

Prenzel, M. et al. (1996). Selbstbestimmtes motiviertes und interessiertes Lernen in der kaufmännischen Erstausbildung. In K. Beck & H. Heid (eds.), Lehr-Lern-Prozesse in der kaufmännischen Erstausbildung. Zeitschrift für Berufs- und Wirtschaftspädagogik, Beiheft 13. 108-127.

REFA Verband für Arbeitsstudien und Betriebsorganisation e.V.(1987). Methodenlehre der Betriebsorganisation. München: Hanser.

Reichl, E. (1990). Mitarbeiterschulung durch selbstgesteuertes Lernen. Personalwirtschaft, 11, 752-754.

Rein, W. (1902). Pädagogik in systematischer Darstellung.

Reischmann, J. (in print). Self-Directed Learning - die amerikanische Diskussion. In H. Siebert (ed.), Lebensbegleitendes und selbstgesteuertes Lernen.

Roth, H. (1973). Pädagogische Psychologie des Lehrens und Lernens. Hannover: Schroedel.

Rottluff, J. (1992). Selbständig lernen. Arbeiten mit Leittexten. Weinheim / Basel: Beltz.

Schelten, A. (1995). Grundlagen der Arbeitspädagogik. Stuttgart: Steiner.

Senge, P.M. (1996). Die fünfte Disziplin: Kunst und Praxis der lernenden Organisation. Stuttgart: Klett-Cotta.

Simons, P.R.J. (1992). Lernen, selbständig zu lernen - ein Rahmenmodell. In H. Mandl & H. F. Friedrich (eds.), Lern- und Denkstrategien. Analyse und Intervention (251-264). Göttingen: Hogrefe.

158

Stiefel, R.T. (1978). Autonomes Lernen in der betrieblichen Weiterbildung. Zeitschrift für Arbeitswissenschaft, 32, 99-105.

Stöckl, M. & Straka, G.A. (1995). Evaluation eines Lernprogrammes für die CAD-Weiterbildung älterer Arbeitnehmer und Arbeitnehmerinnen - Design und erste Ergebnisse. In P. Schenkel & H. Holz (eds.), Evaluation multimedialer Lernprogramme und Lernkonzepte (91-104). Nürnberg: Bildung und Wissenschaft.

Straka, G.A. (in print). Selbstgesteuertes Lernen in der Arbeitswelt. In H. Siebert (ed.), Lebensbegleitendes und selbstgesteuertes Lernen.

Straka, G.A. (1996). Selbstgesteuertes Lernen - Vom 'Key West-Konzept' zum 'Modell motivierten selbstgesteuerten Lernens'. In H. Geißler (Ed.). Arbeit, Lernen und Organisation - Ein Handbuch (59-77). Weinheim: Deutscher Studienverlag.

Straka, G.A. (1995). L'autoformation en Allemagne. Recherches et pratiques du groupe LOS. Education Permanente, 122, 213-220.

Straka, G.A. & Brede, D. (1996). Greif, S., Kurtz, H.J. (Hrsg.): Handbuch Selbstorganisiertes Lernen (Rezension). Management Revue, 3, 257-260.

Straka, G.A. & Macke, G. (1979). Lehren und Lernen in der Schule. Stuttgart: Kohlhammer.

Straka; G.A. & Nenniger, P. (1995). A conceptual framework for self-directed-learning readiness. In H.B. Long and Associates (eds.), New dimensions in self-directed-learning (243-255). Oklahoma: University Press.

Straka G.A., Kleinmann, M. & Stöckl, M. (1994). Self-organized job related learning : An empirical study. In H.B. Long, and Associates (eds.), new ideas about self-directed learning. Oklahoma: University Press, 149-160.

Straka, G.A., Kleinmann, M. & Wilckhaus, F. (1994). Komplexe Lehrarrangements zur Förderung selbstgesteuerten Lernens älterer Erwerbspersonen. In J. Abel (Ed.), Berufliche Weiterbildung und neue Technologien (35-48). Münster: Waxmann.

Straka, G.A., Kleinmann, M. & Will, J. (1994). Abschlußbericht der wissenschaftlichen Begleitung zum Modellversuch FESILI-2000. Unveröffentlichtes Manuskript. Bremen: Universität Bremen.

Straka, G.A., Nenniger, P., Spevacek, G. & Wosnitza, M. (1996). A model for motivated self-directed learning. Education, 53, 19-30.

Straka, G.A., Nenniger, P., Spevacek, G. & Wosnitza, M. (1996a). Motiviertes selbstgesteuertes Lernen in der kaufmännischen Erstausbildung - Entwicklung und Validierung eines Zwei-Schalen-Modells. In K. Beck & H. Heid (eds.), Lehr-Lern-Prozesse in der kaufmännischen Erstausbildung. Zeitschrift für Berufs- und Wirtschaftspädagogik, Beiheft 13. 150-162.

Straka, G.A., Stöckl, M. & Kleinmann, M. (1992). Selbstorganisiertes Lernen für den Arbeitsplatz (SoLfA). Wirtschafts- und Berufserziehung 44, 302-307.

Tietgens, H. (1980). Teilnehmerorientierung als Antizipation. In H. Breloer, H. Dauber & H. Tietgens (eds.), Teilnehmerorientierung und Selbststeuerung in der Erwachsenenbildung (177-235). Braunschweig: Westermann.

Tough, A.M. (1967). Learning without a teacher. A study of tasks and assistance during adult self-teaching projects. Education Research Series, No. 3. Toronto: The Ontario Institute for Studies in Education.

Tough, A.M. (1971). The adult´s learning projects. A fresh approach to theory and practice in adult learning. Toronto: The Ontario Institute for Studies in Education.

Twardy, M. (Ed.) (1992). Curriculumstrukturen selbstgesteuerter Weiterbildung. Köln: Carl.

Volpert, W. (1983). Handlungsstrukturanalyse als Beitrag zur Qualifikationsforschung. Köln: Pahl-Rugenstein.

Volpert, W. (1985). Pädagogische Aspekte der Handlungsregulationstheorie. In H. Passe-Tietjen & H. Stiehl (eds.): Betriebliches Handlungslernen und die Rolle des Ausbilders. Wetzlar: Jungarbeiterinitiative a.d. Werner-von-Siemens-Schule.

Wang, M.C. (1982). Entwicklung und Förderung von Kompetenzen zur Selbststeuerung und zum Selbst-Management bei Schülern. Unterrichtswissenschaft, 2, 129-139.

Weiner, B. (1986). An attributional theory of motivation and emotion. Berlin: Springer

Weinert, F.E. (1982). Selbstgesteuertes Lernen als Voraussetzung, Methode und Ziel des Unterrichts. Unterrichtswissenschaft, 2, 99-110.

Weltner, U. (1978). Autonomes Lernen. Stuttgart: Klett-Cotta.

Wild, U.P. & Krapp, A. (1996). Lernmotivation in der kaufmännischen Erstausbildung. In K. Beck & H. Heid (eds.), Lehr-Lern-Prozesse in der kaufmännischen Erstausbildung. Zeitschrift für Berufs- und Wirtschaftspädagogik, Beiheft 13. 90-107.

Ziller, T. (1856). Einführung in die allgemeine Pädagogik.

About the Authors

Carré, Philippe
Associate Professor Université des Sciences et Techniques de Lille, consultant Interface Etudes et Formation, Paris, France.

Denis, Brigitte
Service de Technologie de l'Education (STE) de l'Université de Liège, Bdgium.

Filgueiras, Maria Joao Malheiro
Electrotechnical Engineer (Telecommunications), consultant in educational technology, training of trainers.

Iliadis, Nicholas
Ph.D., Pedagogical Institute, Ministry of National Education and Religion, Athens, Greece. Councelor of the Minister, Member of the Departments of Vocational Education, Evaluation, General Education.

Klink, Marcel van der
Assistant professor, University of Twente, Enschede, The Netherlands, Department of Job Education, Research: learning and training in the workplace.

Metzger, Christoph
Full Professor for Economic Education and Business Administration, Director of the Institue for the Teaching of Economics and Business Administration, University of St. Gallen, Switzerland. Research, Development and Consulting: Vocational Education.

Wim J. Nijhof
Full-time professor in education at the University of Twente, Enschede, The Netherlands. Research: vocational and corporate training, relationship between qualification processes, work and education, workplace as a learning environment.

Percy, Keith
Professor, Director of the Department of Continuing Education, Lancaster University, United Kingdom.

Straka, Gerald A.
Professor, University of Bremen, Germany. Chairperson of the Research Group LOS (Learning, Organized & Self-Directed). Research: Learning-teaching theory.

Zucchermaglio, Cristina
Department of Social and Developmental Psychology, University La Sapienza, Rome, Italy.

The rapid transition from industrial to an information society, a global economy and competition, new organizational concepts and strategies for human resource development have all led to lifelong and self-directed learning becoming increasingly important around the world. The dynamic interplay between knowledge, skill and the will to self direction in learning has been reviewed for vocational training in Europe according to the following perspectives:

- dispositions, activities and instructional designs
- educational philosophies in the countries, companies as well as in the educational systems
- historical and social developments in different countries
- theoretical and methodological approaches
- empirical findings.

Münster/New York
München/Berlin

ISBN 3-89325-552-4